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HP-UX

Windows NT

MPE/iX

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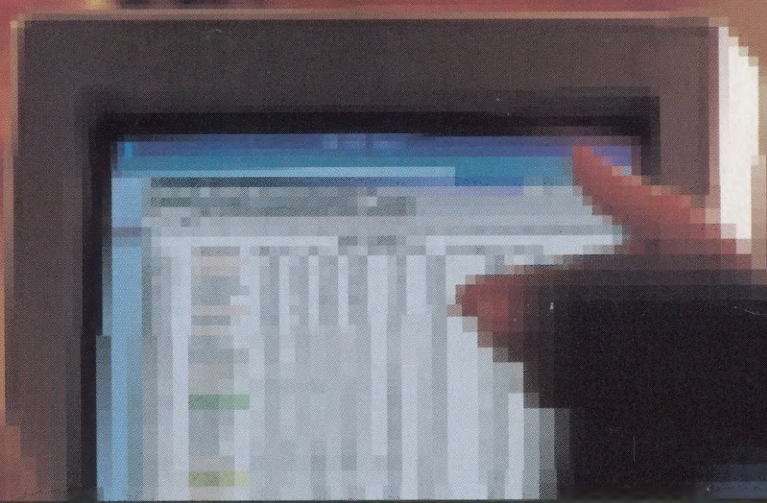


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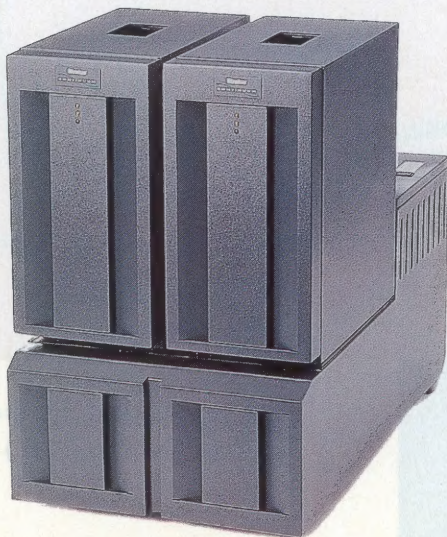
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The Internet is IT. The World Wide Web is IT. If you haven't gotten IT, get IT now. Because whether you know it or not and regardless of whether you like it or not, "the Net" and the Web are changing how commerce and communication are conducted across the globe. How do I know? Well, I could tell you that my 12 plus years of industry experience makes me an infallible prognosticator. Who would buy that one? Or I could tell you that Web technology is going to be our savior. Halleluia! Praise the Lord and pass the bandwidth. But who would listen? So let me confess: my mother told me. Well, not in so many words.

Just recently, my 80-ish year old mother asked me if she could use my personal email account. Huh?! She wanted to know if I would pass along a note from her favorite emailing nephew. Then the very next week, she's asking about food recipes from the TV Food Network's Web site. Say what?! This from the woman who can't bear the thought of throwing away her 40 year old skillet. "It works just like the day I bought it," she's fond of telling me. "Why do I need another one?" I can't argue. She's happy and productive. Besides, she knows how to wield a skillet as well as fry in it. All right already, my mother is not exactly applying for an analyst's position at the Aberdeen Group. But she does know a good thing when she sees it. So does a formerly Windows-challenged friend of mine. As a market research analyst for a local vo-tech school district, he's designing the district's Web sites — part-time! That's amazing to me because as of early last year, he couldn't see much use for a computer beyond WordPerfect and SPSS — for DOS.

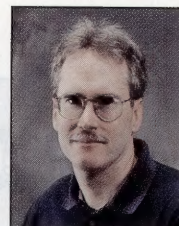
Windows 3.1? A mere nuisance. He couldn't be bothered with learning a GUI. He was forever asking me, "What's the big deal with Windows anyway?" Frankly, I was hard pressed to come up with good answers. He was happy and productive too. But guess what? He now wants to put the school's records on an intranet, so that parents might be able to download their children's grades. Imagine that! And that's just the beginning. I can hardly learn enough HTML and Web design skills myself to keep up with him. Our friendship rests in the balance.

So, what's going on here?

It hit me like a home page under construction when I came across a book titled, *net.gain, expanding markets through virtual communities* (Harvard Business Press, 1997). As the *net.gain* authors, John Hagel III and Arthur G. Armstrong put it, "virtual communities give people with similar experiences the opportunity to come together freed from the constraints of time and space and form meaningful relationships. The strength of virtual communities rests in their ability to address multiple needs simultaneously." So, it seems my mother, my friend and myself all had our individual interests that could be served by virtual communities and we came screeching into intersecting strands of the Web. For more information, drop in at www.hbsp.harvard.edu/netgain.

Of course, let it be known that HP is getting into the act: it's building a virtual soccer community around the 1998 World Cup Games in France (see our story about www.france98.com on page 26). There's no doubt that HP understands the importance of the HP Domain Internet technology it's providing, but I have to wonder if HP and all its partners understand the significance of the virtual community. According to Hagel and Armstrong, "Success in the virtual community business hinges not on technology-driven differentiation but on strategies designed to accelerate member acquisition and to create deep understanding of the needs of those members." We will see.

In the spirit of the virtual community, I invite you to participate in our Web Forums. Some early pioneers have already gotten started without you. So, please check in with your views (click on the Forum button on the navigation bar) and help them out. I'm looking forward to hearing from all of you in our growing virtual *HP Professional* community.



George A. Thompson
thompsona@hpro.com

HP NEWS & VIEWS

A T P R E S S

Exec VP Belluzzo Leaves HP For SGI

In late January after 22 years with HP, Richard E. Belluzzo, executive vice president and general manager of HP's Computer Organization, has departed the company to become chairman and chief executive officer of Silicon Graphics, Inc. At HP Belluzzo was responsible for all computer products including printers, scanners, plotters and personal computers; workstations and larger systems; and the software and services group.

"We're disappointed to be losing Rick," says Marlene Somsak, a spokesperson for HP. "But we're lucky to have a deep pool of talented vice presidents who can step in and take over." In the meantime, HP president and CEO, Lewis E. Platt, will temporarily step in and take charge of the division.

In a related announcement, HP also announced the appointment of Edward W. Barnholt, 54, to executive vice president and general manager of the newly created Measurement Organization. The Measurement Organization will include all the products formerly associated with HP's electronic test and measurement business as well as the Medical Products, Chemical Analysis and Components Groups. HP's other arm, the Computer Organization, has been expanded to include the Information Storage Group originally a part of the Measurement Systems Organization.

Surprisingly, HP's re-organization and Belluzzo's departure come at a time of stellar growth for the company: 1997 net revenue stood at \$42.9 billion, up 12 percent from 1996, and net earnings at \$3.12 billion, an increase of 21 percent over 1996.

Compaq Acquires Digital Lock, Stock & Alpha

Plowing ahead in their drive to become the world's largest provider of enterprise computing, on January 26, Compaq Computer Corporation (Houston, Texas) swallowed up Maynard Mass.-based Digital Equipment Corporation lock, stock and Alpha. The \$9.6 billion deal is thought to be the largest ever in the history of the computer industry. Still subject to approval by Digital shareholders, the deal provides \$30 in cash and 0.945 shares of Compaq common stock for every share of Digital stock. Digital will become a wholly-owned subsidiary of Compaq.

"We feel Compaq's interest in acquiring DEC is twofold," says Les Wilson, system marketing manager for HP's high performance systems division. "They want to gain access to the service and support DEC offers to the enterprise, and they want their high-end systems like clustering and Alpha chip technologies." Wilson thinks the UNIX/Windows NT culture clash between the two companies may be difficult to reconcile. He added that Compaq thinks of "UNIX as a stepping stone to Windows NT," a philosophy that flies in the face of the traditional DEC customer. This will lead to resistance from DEC's installed base of customers who are not yet ready to accept Windows NT as a reliable server platform. HP will mount an aggressive push towards winning over those customers and move them on a path to 64-bit HP-UX with upcoming buy-back programs. "We aim to come forth with a very aggressive message," he says. "We feel that HP is the only source in the marketplace that can provide the correct mix of NT and 64-bit UNIX."

Meanwhile, other recent DEC initiatives that may get left out in the cold include: the Intel agreement that turned the manufacture of the Alpha chip over to the Pentium giant and the even more recent joint development project of a 64-bit UNIX with Sequent Computer Systems (see below).

ONION PEEL SOLUTIONS ADDS A LAYER TO OPENVIEW

Onion Peel Solutions (Raleigh, N.C.) has entered into a joint software development project with HP that will modify Amerigo, an existing OPS product, and create a new application called Amerigo/L2. Amerigo/L2 will use OPS' Amerigo map engine to manage and dynamically map network devices to their connected port on a repeater. OpenView API's will provide the technical foundation for Amerigo/L2.

OPS is hoping that the new product will provide a level of accuracy not currently available to OpenView Network Node Manager. According to OPS VP of Business Development, Doug Austin, Amerigo/L2 will allow administrators and operators to "get accurate maps, reflecting actual device connectivity that is automatically built, managed, and updated." Building the desired network layout and applying map topology will be done with a GUI configuration tool.

Amerigo sells for \$8,995, with the L2 functionality an additional price not yet determined. Amerigo/L2 will be available as an upgrade to customers with an existing Amerigo license.

DIGITAL AND SEQUENT TAKE ON MERCED

In a January 6 conference call attended by Digital CEO Robert Palmer and Sequent CEO Casey Powell, the two companies announced a pooling of their resources towards a new 64-bit UNIX. Palmer says the new operating system will be "based on Digital UNIX and key Sequent technology," augmented with joint development by both companies, and will be "byte-order compatible with Merced."

Powell stated that Sequent has "long been looking for UNIX to allow for one standard." After "sever-

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al close calls," (notably SCO and Solaris) they teamed with Digital, in part because of the recent Digital/Intel agreement. Interoperability between UNIX and Windows NT was a key component in the decision for Sequent. "We are committed to Intel and NT," says Powell. "That was not available to us with Solaris or SCO." Adding that Sequent must provide price/performance and outstanding

scalability, Powell sees the joint project with Digital as a "clear path forward" towards developing "64-bit applications that will be available at the inception of Merced."

Powell summed up by saying "We believe Solaris belongs on SPARC, HP-UX belongs on the big HP Merced, but this operating system belongs on Intel."

HP WIDENS DISTRIBUTION CHANNELS FOR MULTISOURCING

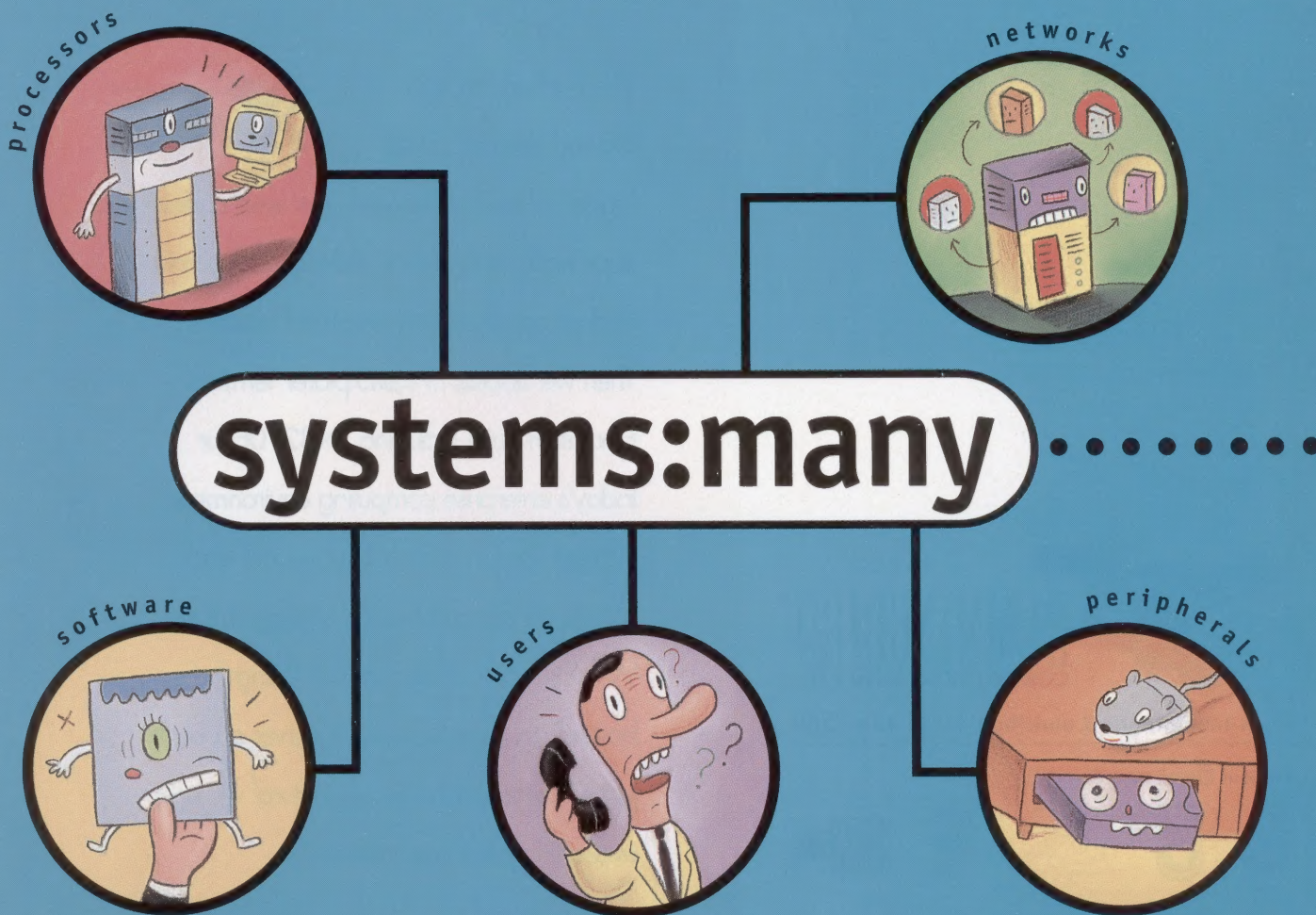
Effective January 1, HP opened its distributor/aggregator channel to multi-sourcing of HP products. Under the new program, all HP resellers authorized for NT-based systems and peripherals will be able to source HP products from any distributor or aggregator.

"This creates a level playing field for all HP distributors," says Eric Williams, VP of Computer Product Operations of Gates/Arrow Distributing. "It allows us to stand on our own merit with the value we add." Williams expanded that thought by adding that end-users will now be able to pick resellers who are best for them without concern for how that reseller is viewed by HP. Likewise, the reseller can then work with the distributor that best fits their needs rather than by their particular authorization.

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One important aspect of the program is the extension of HP's subsidized floorplanning to all distributors. All HP resellers who purchase at least \$1 million annually, will qualify. In effect, this gives smaller resellers the chance to grow while HP helps by financing part of that growth. "This is a clear win for everyone in the channel," says Williams. "Now, the whole channel is open to high-volume, high-impact customers."

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Mountain.net Computer Trivia

What's wrong with the diskette icon used for the as the "Save" function on the toolbar in Microsoft Word?

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HP SOLVES THOSE SECOND-HAND WOES

Several months ago I ran into a penurious friend of mine on the streets of downtown Philadelphia wearing a regal-looking Chesterfield overcoat, complete with velvet collar, silk lining and deep pockets. Knowing that purchasing such high (if not current) fashion is not his style, I asked him where he found such a bargain. "At the second-hand store," he said. "Cost me six bucks."

If bargain hunting for computers, although second-hand, is your style, HP has come to the rescue with the HP Outlet Center, (www.hp.com/go/outlet). The electronic factory was created as a way to sell refurbished units to a growing number of Internet shoppers. Currently, the outlet is featuring HP Pavilion PCs and DeskJet printers. According to HP, refurbished products are typically customer returns that have been completely restored (and tested) to their original performance. Others may be excess inventory items or products that have small scrapes, scratches or other cosmetic imperfections. All products can be shipped (via FedEx) to anywhere in the continental U.S.

Back to my friend. Opening his coat to show me the lining, he said "I'd like to know what happened to Lou Wilson, though," as he revealed the words "property of Lou Wilson" marked on the silk. I wonder if old Lou ever owned a Pavilion PC.

-Ken Deats, Associate Editor
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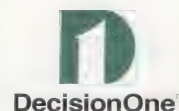
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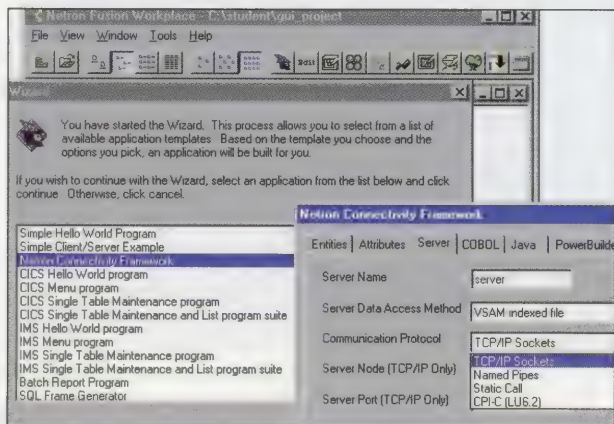


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Webster's New World Dictionary defines legacy as "anything handed down from, or as from, an ancestor." Sometimes fusing a legacy into a newer, modern environment may seem as out of place as a Chippendale settee in the middle of a room full of Andy Warhol and Jackson Pollack prints. Fitting legacy mainframe systems into the world of Windows desktops and Web browsers can seem just as anachronistic.

That's where Netron, Inc. hopes to fit their new product Fusion 3.2 for Windows NT. "We want to make it easy to create applications using COBOL as the existing server technology and several client based technologies like Java and Virtual Basic," says Peter Ruttan, executive vice presi-

dent at Netron. In short, with Fusion 3.2, developers are able to create three-tiered, client-server systems that can present mainframe COBOL and UNIX data at the desktop using an Internet Web-browser front-end.

Ruttan touts the "frame technology" Netron has used since 1983. Fusion 3.2 makes extensive use of this modular approach by allowing developers to build from components, re-using those components from application-to-application.

These "component frameworks" give developers a choice of pre-defined patterns for building host-based, client-server, and browser-based, Internet-enabled applications. Netron claims this approach to software reuse has been shown to produce core systems 70 percent faster than the industry average.

According to Ruttan, one aspect of Fusion that sets them apart from their competitors is the ability to manipulate a wide variety of data structures, allowing developers to move projects into production faster. "Others only handle relational data," he says. "We treat hierarchical and basic indexed data the same as relational structures."

Rick Deland, systems

development manager for Anderson News, a Knoxville, Tenn.-based wholesaler of magazines and books made good use of Fusion in building a data warehouse application. The problem was to give Web-based access to their supplying publishers so they could review consolidated sales data from over 50 distribution sites. "The data is kept on an AS/400. We built a three-tier client-server application that used Fusion and Visual Basic to present store records to each of them. They had the ability to drill-down multiple layers to the point of looking at how one magazine may have been selling at one individual site."

Deland was especially impressed with Netron's emphasis on re-usability within the "frame technology." "It turned out to be a great productivity tool, especially for our younger developers," he says. "It taught them how to re-use common code." Even though he deemed the application a "mammoth product," the entire development cycle was six weeks with a staff of three front-end and seven AS/400 developers.

*Ken Deats,
Associate Editor*

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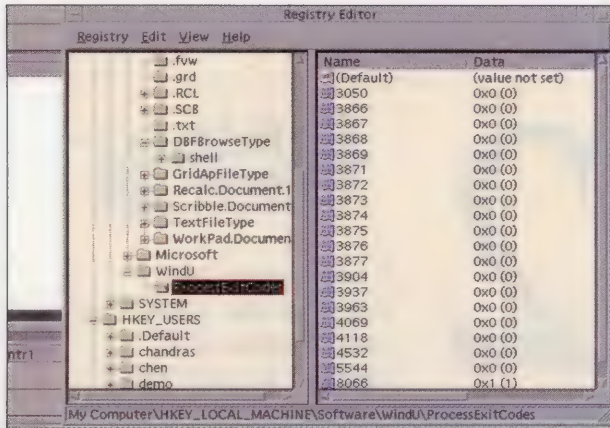


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Two years ago, Andyne Computing Limited had come to a crossroads. "We were getting to the point where we were not able to keep our UNIX product as current, with respect to features and functionality, as the Windows product was," says Mark Young, senior system architect at Andyne Computing. "As a result, it fell behind a few versions."

So the Kingston, Ontario-based company started looking for a cross-platform porting solution. The solution not only had to use a single Windows source code to deliver a Motif version of Andyne's GQL (Graphical Query Language) query tool, but it also had to support third-party database connectivity. Fortunately, it didn't take long for the company to discover Bristol

Technology Inc.'s Wind/U.

Wind/U enables software developers to use a single source code, based on the Windows API, to develop applications for multiple platforms. Developers can employ the Microsoft Foundation Class Library, Visual C++, or any other Windows development environment to create the base code, which is then compiled, linked, and executed via Wind/U-in the UNIX, OpenVMS, and OS/390 operating environments.

Not only does this make it more efficient to develop software for a multiplatform network, but it also provides Windows functionality to non-Windows workstations. That includes support for OLE, which is important to Young. "The newest versions of our products are very heavily OLE-based," says Young. "We needed to find a technology that would support OLE on UNIX, which in fact is what Wind/U does in its latest version."

Wind/U does cost something in terms of performance, says Jim Vienneau, the software engineering manager responsible for UNIX platforms at Sybase Inc. "As opposed to a native UNIX Motif application, (the ported code) does run slightly slower," says

Vienneau, "but not such that it's really an issue. Our customers have been very satisfied with the performance."

Wind/U isn't a turnkey solution, either, says Young. Even with Wind/U, Andyne Computing had to address compiler and environment differences on the UNIX systems the company supported. "I would caution that it's not going to happen overnight," says Young, "but it's certainly going to make your development a lot faster than it would have been trying to go native."

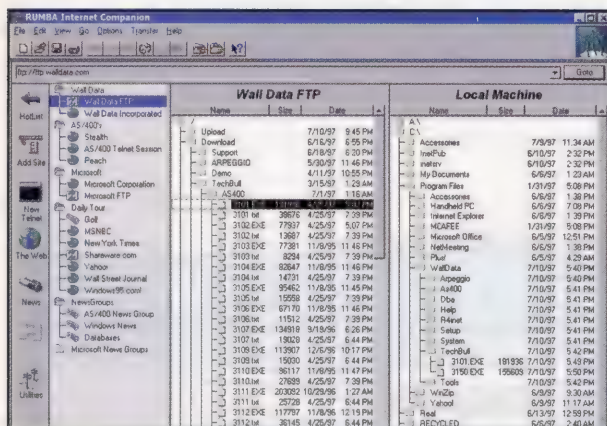
Wind/U 4.1, supports ActiveX, including Component Object Mode (COM), OLE, visual editing, and drag-and-drop functionality; Windows 95 common controls; and Windows 95 common dialogs.

It also includes Bristol Technology's Xprinter, which allows developers to add sophisticated printing functions to applications. HyperHelp, a context-sensitive, hypertext help product from Bristol Technology, is available as an add-on.

Wind/U currently is available for HP-UX Solaris, IBM AIX, SGI IRIX, Digital UNIX, and Digital OpenVMS.

-Jeff Dodd,
Contributing Author

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One thing about legacy systems; they're just like opinions, almost everyone's got one, and they can be just about as varied as the people who form them. Also like opinions, they can be almost impossible to change, usually making it easier to adapt and go along with them.

That's where Wall Data Inc. (Kirkland, Wash.) comes in with the release of Rumba Office 95/NT v5.2. "We think Rumba will be a stepping stone to move data to intranets and extranets with little risk," says Peter Bayley, Wall Data's Vice President of Marketing.

"Customers can use it to familiarize themselves with the use of browsers to access corporate data for mission-critical applications." The ultimate goal, according to Bayley, is point-and-click

access to data from anywhere in the enterprise.

Rumba Office uses ActiveX object-based technology. Microsoft's ActiveX controls allow software designers to use components that represent unique functions which can be reused from application to application, eliminating the need to re-write code for every new program and allowing for more flexible systems that are easier and quicker to design. Wall Data claims to offer the first software product to fully implement ActiveX technology using the 32-bit strength of Windows 95 and NT.

Tom Dole, an Account Executive with GE Capital working for LSG/Sky Chefs, (Arlington, Texas) the airline industry's largest caterer, used Rumba Office to build access to a general ledger and billing system. "They had over 1,000 Windows 3.11 and 95 workstations with data on several mainframes, HP 9000's, DGs, Suns, AS/400s and VAXs," he says. "There were way too many emulation packages installed."

Dole standardized on Rumba, providing a consistent GUI that is now in use across the enterprise. "Not only did it give them a standard look and feel, it minimized the cost of the desk-

top."

Rumba Office v5.2 includes the Internet Companion, Wall Data's Internet/intranet connectivity application that allows Office access beyond the enterprise. The Internet Companion consists of FTP, News Group, multi-host access applications, network diagnostic utilities and is integrated with Microsoft Internet Explorer 3.02 or higher. It allows access to host systems and Internet and intranet data with one application.

Other new functionality introduced with Rumba Office v5.2 include 32-bit access to HP 3000 and HP 9000 systems with Rumba ObjectX controls; AS/400 display, print, and file transfer capabilities over IBM's TCP/IP; and support of NFS Client 95/NT for access and transfer of UNIX-based files and applications over TCP/IP using either the Rumba Router or the NetSoft router.

Rumba Office 95/NT v5.2 is available for \$500 per seat, or as an upgrade from the current version for \$100 per seat.

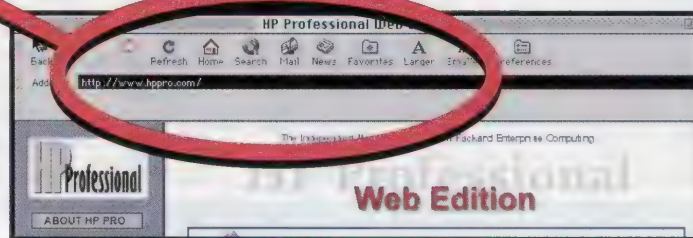
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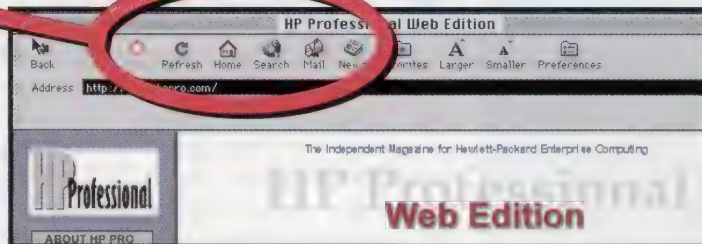
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JUST IN THE NET OF TIME



Don't Break The Chain, Gang

“The evolution and acceptance of Internet technologies has created a new level of connectivity between companies.”

— David Alschuler,
Director of Electronic Commerce Markets for
the Aberdeen Group (Boston, Mass.).

Ok, now what exactly does that mean to you? Well, according to Alschuler, it means that “the formerly ‘rude and crude’ standards of exchanging information between companies is being replaced, and that interconnectivity is stimulating a whole host of applications that restructure or reinforce time in the supply-chain process.” In other words, you can expect to see (if you already haven’t been part of) a fundamental re-engineering of the supply chain process.

LINK TO
“THE EXTRAPRISE”
Chesapeake Decision Sciences (New

Providence, N.J.) has certainly seen and felt the effects predicted by Aberdeen’s Alschuler. The company recently announced a new set of extensions to its Manager for Interactive Modeling Interfaces (MIMI) products to facilitate what it calls “extraprise” supply chain decision collaboration. MIMI applications contain forecasting, ordering, planning and scheduling capabilities that let companies accurately weigh supply-chain decisions, according to Fritz Leshner, marketing manager for Chesapeake. The products were developed through collaboration with Chesapeake customers DuPont, Monsanto, Philip Morris, Quaker Foods, Rohm & Haas, Shell Chemical and Union Camp, in order to provide widespread and secure access to statistical and forecasting data used to make supply decisions.

Leshner says traditional ERP supply-chain solutions often provide the transaction backbone for an enterprise, while MIMI provides the “brains” on top of ERP systems that let companies analyze data, map it against current and future schedules

James R. Dukart

and perform "what if?" calculations. "Where the Internet comes into play is distributing that forecast," Leshner says. "You can now send it out to sales managers, other suppliers in your chain, possibly your customers. They can all see it through the standard interface of a Web browser, and you can get feedback from them."

Alschuler explains that what used to be an intra-enterprise endeavor is now moving beyond enterprise walls to become a cross-company undertaking. "The business processes that are implicit in supply-chain management in enterprise resource planning (ERP) are inward-looking," Alschuler says. "They assume data coming in at a reasonable currency, and the only

outward exchange is through EDI. The emergence of real-time transaction-oriented systems will allow companies to restructure those processes."

If you don't already know, supply chain management is the attempt to minimize on-hand inventories and improve supplier response times in the manufacturing and delivery of products. The goal of supply chain management is to have exactly the right amount of all supplies needed to produce something, precisely when and where you need it. Poor supply chain management can result in excess inventories, production bottlenecks and — perhaps most importantly — the inability to meet customer demands, while effective supply chain

management means you not only have what you need when you need it, but that you can react more quickly and effectively to ever-changing shifts in demand.

As a result, optimized supply chains offer tremendous cost savings to any large organization. A recent study by Weston, Massachusetts-based consulting firm Pittiglio Rabin Todd & McGrath (PRTM), for instance, showed that a \$500 million company can save between \$15 million and \$35 million per year through lowered inventories and reduced time-to-market. In addition, supply chain optimization helps organizations speed up production on new products, react more quickly to ever-changing market demands and take advantage of extraordinary circumstances to meet unusually high demand (e.g., a particularly harsh winter increasing demand for heavy clothing, heating oil or cold-weather auto parts).

CHAIN, CHAIN, CHAIN...

"With the growth of the Internet and the ability to connect easily to suppliers and customers, we are seeing companies optimizing across supply chains rather than just within their companies," says Steve Cole, Vice President of Marketing for i2 Technologies (Irving, Texas). "And that makes it about business processes as well as technology." According to Cole, supply chains expanding "outside the four walls of an enterprise" stretch the traditional relationship between trading partners: that is, how much information does one partner ideally want to share with another. And that "personal communication" aspect lags behind the "technological communication." "Frankly, the technology is becoming the easy part," admits Cole.

"If you don't get your management processes in order, you simply multiply the confusion," says Bill Helming, a director at PRTM and on the Supply-Chain Council (Pittsburgh, Pa.). He says companies fall into one of two supply-chain automation categories: *Supply Chain 101* and *Supply Chain 201*. "Supply Chain 101 companies are those that want to improve

THE HEAR AND NOW

Internet-enabled supply chain processes could benefit suppliers, manufacturers, and consumers in three ways, according to Rich Sherman, senior vice president of strategic research at Numetrix (Toronto, Ontario, Canada).

1. A company can go online to view inventory levels at retail or manufacturing clients. The supplier sets pre-determined "safety stock" levels, so that any time the supply nears or falls below that level, the supplier is notified in order to address the looming shortage.
2. Customers are notified whenever a shipping date slips, so that they are not left with "a bunch of hired help" to unload shipments that are not going to be there on time anyway.
3. The marketing department can talk to the forecasting department so that the latter is not surprised when a new marketing initiative hits that unexpectedly increases demand.

All in all, Sherman says, Internet technologies can help create more efficient supply chains by addressing the real culprit behind inefficient sub-optimal supply chain processes — time lag. "The big problem has always been not so much demand variability, but the time delay in passing back information," he added. "It is like the old children's game of 'Telephone'. You start with one thing being said, and by the time it gets to the end of the line, it has been completely distorted. The Internet is providing the capability to electronically communicate information across to all the people who need to hear it, hear it accurately, and hear it now."

their internal operations to supply products to their existing customers more rapidly. Supply Chain 201 companies are working on or involved in inter-company chains. While it's tempting for many companies to try to jump into "Supply Chain 201," notes Helming, companies that have not mastered the fundamentals of their business processes are bound to run into problems. Still, companies should not let these issues keep them from investigating the benefits of extended supply chains.

In a Supply-Chain Council sponsored case study earlier this year, an OEM, contract manufacturer and electronics distributor coordinated their supply chains using Internet/intranet technology and increased on-time delivery from 65 percent to 99 percent, lowered inventory from \$3 million to \$900,000 and reduced headcount from 13 to 8 people involved in the combined supply chain. A second case study including a coordinated supply chain for a prod-

uct that covered five companies — Motorola, Solectron, Avnet, Texas Instruments and Compaq — resulted in an increase of on-time delivery from 85 percent before coordination to 100 percent after, and inventory reductions from \$4 million to \$1.1 million.

Among the benefits the companies discovered, Helming says, were that demand forecasting departments at one company could merge their figures with the supply forecasts at their supplier companies, integrating sourcing and delivery processes in ways they could not do before. "By linking these planning processes directly, the Internet is a great facilitator of these interactions," he added. "That is the next frontier in supply chain management, being able to seamlessly integrate across companies."

Merisel (El Segundo, Calif.), the large computer distributor to retail outlets like CompUSA, Circuit City and Office Depot, uses extranet-based ordering and purchasing to reduce or

eliminate the time Merisel reps need to spend answering "research-oriented" calls. "Before, several hundred people would be on the phones answering questions about how many items were on hand or what the credit limit was," says Liz Sara, vice president of marketing for SpaceWorks (Rockville, Md.), provider of electronic commerce software and consulting to Merisel. "The company [Merisel] estimated that two-thirds to three-fourths of the calls they got were along 'research' lines. Now partners can have access to this data, and the wholesaler can redeploy people in other areas that might be more productive."

CHAIN OF TOOLS

Many more suppliers means production delays at the top of the supply-chain will not be as likely to create bottlenecks further down the line. That fact, however, means more pressure on suppliers to move things faster to market and reduced costs



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linked to supplier delays. Valori Nicolai manages the Automotive Network Exchange (ANX) program for EDS (Troy, Mich.). ANX is a large business-to-business extranet supported by the Automotive Industry Action Group (AIAG; Southfield, Mich.), a consortium of OEMs and automotive parts suppliers, including the likes of GM, Ford, Chrysler, Honda, Toyota, Caterpillar, Johnson Controls and BASF. Nicolai says the evolution of industry-wide extranets featuring supply chain capabilities is going to have an undeniable effect on the ways in which supplier relationships are built.

Though the ANX is still in the pilot stage, Nicolai says an early result includes a re-engineered shipping inventory turnaround time that is expected to save manufacturers \$71 on the cost of each car. Industry-wide, she says, savings could easily add up to \$1 billion per year. Nicolai adds that while cost reductions are a big selling point of the ANX, the develop-

ment of industry-wide applications and databases have important future developments, for example, the widespread and uniform distribution of hazardous materials data sheets or a widely-used fastener database.

"The initial benefit was to be cost reductions, but that works well for the larger partners but not the smaller ones," Nicolai says. "Sharing data and information helps them out more." Smaller players will be helped by an increased ability to innovate. Established partner relationships, she says, sometimes result in fewer companies having full access to product specifications or material needs of the larger companies. With such information more widely available via an industry-wide extranet, it becomes easier for an engineer or set of engineers at a small company without a long-standing trading relationship to develop ideas based on what the larger company might need.

"Parallel production" is the golden opportunity, however, that Nicolai

envisioned. "Currently, you get a two-day schedule slippage at the top, and it snowballs down the hill and before you know it you have quite a snowman on your hands," Nicolai says. "But if all the tiers of suppliers have access to the data from OEMs, then they can look at the data and decide whether they can fit into the production schedule. They don't have to wait and see if they can fit in later." Although the links in the supply "chain" become somewhat less sequential, a spark-plug company, for example, could engage in production for any number of engine assembly plants at the same time, and a slowdown in one engine assembly plant would not shut down production at the spark plug company.

The ANX model could be replicated in many other industries, both within and outside of the manufacturing arena. "Automotive touches just about anything and everything in the manufacturing environment," says Nicolai. "It is envisioned that the

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chemical, metal, insurance and banking industries might want an ANX connection as well. This is the model for industry-wide and maybe even cross-industry extranets."

By now you should realize that the supply chain can become bewilderingly complex. The manufacture of automobiles or airplanes, includes not only companies that produce large parts like side panels, wheels, tires, windshields and engines parts, but also various paint suppliers, glass providers, nuts and bolts manufacturers, tools providers and thousands of other product manufacturers. Internet technologies provide an excellent tool for optimizing the supply chain, and for spreading it not only across the enterprise, but also throughout an enterprises' trading partners.

Jim Norman, product strategy manager for ERP software vendor PeopleSoft, Inc., of Pleasanton, Calif., points out that more widely-distributed forecasts mean more accurate supply decisions.

"We are changing the field of forecasting," says Norman. "What used to be one person in the back room or one department creating the forecast is now done through collaboration. Using OLAP (online analytical processing) and workflow, you can now send it around, even to your main customers, and get their feedback. You end up with more accurate data."

The major benefit, Norman says, is reduced "just-in-case" inventory that companies are forced to carry in order to meet changing demand. He adds that better planning also means quicker-to-market products and more precise purchasing contracts. The overall result is that companies are made more efficient by having up-to-date information widely available.

-James Dukart is a writer with the Washington News Bureau. Reach him at washbureau@aol.com.

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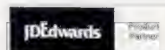
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The Internet is cropping up everywhere in today's enterprise environment. In addition to appearing on the business desktop as the familiar browser-based World Wide Web, Internet TCP/IP technologies are being deployed by companies around the globe to develop intranets (or private corporate internets) for internal business functions as well as extranets (or supply chain internets) across-enterprise business collaboration.

"The enterprise Internet/intranet services is a booming market, noting that what was formerly of interest mostly to the Fortune 1000 is heating up among smaller and medium-sized businesses," says Mark Hudson, product marketing manager for HP's Internet Application Server Division in Cupertino, California.

According to the Yankee Group (Boston, Mass.), 87 percent of the top 100 U.S. companies and more than 80 percent of Fortune 1000 companies are developing intranet applications. Demand is also building in Europe, with more than 30 percent of large European companies building or deploying intranets, and there is strong growth in intranet applications in Asia and South America. Sensing the explosive business opportunity that this presents, HP has entered the corporate internet/intranet fray in a major way with its HP Domain Internet Server product line, an integrated package of turnkey solutions that lets companies big and small build and

maintain their Internet, intranet and/or extranet connections for Web publishing, messaging, collaboration, dynamic content management and commerce. As Hudson puts it, "By going on the 'Net', every company immediately becomes a global player."

The Yankee Group says internal adoption of 'Net' technologies by corporate users worldwide has indeed reached a "feverish pace." Nevertheless, the Yankee Group observes that this feverish pace is taking an evolutionary course as intranets move from an initial stage of being just tools for information distribution, to a secondary stage of enterprise-wide computing collaboration. Intranets, say the Yankee analysts, will finally evolve into inter-enterprise extranets featuring both business-to-business and business-to-consumer electronic commerce.

FROM EAST TO WEST: HP SERVES UP HP DOMAIN INTERNET SERVERS

That's why HP Domain Server offerings closely mirror those stages. People usually start, HP's Hudson says, by buying the HP Domain Publishing Server, which is used to publish marketing and sales materials on the

Web. Next, companies integrate Domain Messaging servers to pass information among and between sites within the enterprise. "The Domain Messaging and Publishing server is an ideal product for small



HP Internet Solutions

The Business Of E-Business...

The Yankee Group predicts that business-to-consumer commerce will grow from \$2.7 billion in 1997 to \$4.2 billion in 1998; by 2000 it will top the charts at \$10 billion.

and mid-sized accounts that don't have a messaging infrastructure that the largest companies use and derive great benefit from," explains Hudson. "We now see this as our mainstream package, because it contains all the Web publishing tools, but on top of it we added messaging capabilities that allow companies with remote offices to communicate more effectively."

So, the next step, continues Hudson, is collaboration. This includes electronic mail, groupware, calendaring, online discussion groups and shared electronic "white boards" that let workers in different time zones view and work on the same documents

interactively. Hudson uses his own HP Internet Applications Division as an example. "A lot of our project development process will have a group in Europe start work, and when their day ends, it will be taken over by a team in the U.S. and then it is transitioned to a team in the Far East," Hudson says. "It is targeted toward large companies looking to take advantage of what collaborative computing can do."

Information Repository, is the last HP Domain Server package. But certainly not the least, because it's geared toward the "very top tier of corporate America" where extensive Web environments already exist, and the challenge is managing content and providing ease-of-use both internally and for customers and business partners visiting the company. Included are several content management tools and search capabilities, including datablades for text, images, video,

animation, maps and other types of multimedia content. In fact, it is ideal for marketers and for market research.


HP customers are using the Information Repository solution to take data stored on various databases and collected from widespread Web sites and correlating it with bit maps to show where the information is and what its status is. Hudson notes, for example, that this could help retail clothing stores better review and manage their inventory.

99.95 PERCENT UP TIME

The entire HP Domain product line is backed up by HP's 99.95 percent assurance of up time capabilities that has been offered for years on the UNIX side. The HP Domain High Availability offering assures that sites will be up 24 hours per day, seven days a week. Consequently, The Yankee Group approves of HP's Domain Server

...Is Business

Even more impressive is the predicted growth of business-to-business commerce which is expected to leap from \$7 billion in 1997 to \$34 billion in 1998 and surge ahead to more than \$170 billion in 2000.



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Spree.com And HP Bring Co-Op Marketing To The Web

The world's first "online cooperative retailer." That's how Spree.com billed itself when it launched in September 1997. The concept is similar to that of network marketing, where individuals or organizations sign up to become Spree Independent Partners (SIPs) and get a commission for all the business conducted on the Website by those they have referred. Spree.com's "stores" currently sell books, flowers, coffee & tea, and plans are in the works to add music and videos, appliances, home entertainment, health & fitness and pet supplies. With more than 3,000 SIPs already on board Spree expects to top out at 31,000 by the end of its first year, generating revenues of over \$10 million.

With the independent partners concept, though, Spree.com's technology demands are greater than those of most \$10 million sites. For one thing, the company has to track not only what orders and products consumers want, but also which SIP has referred that buyer and then calculate commission percentages to be paid out based on purchases. Because Spree.com is continually adding new stores, the complexity of these commission and sales calculations continues to expand. In terms of technology infrastructure, this means Spree.com needs high performance, flexibility and tremendous reliability.

NO MARGIN FOR ERROR

"Spree's system had to provide seamless integration between Windows NT and UNIX, had to be scalable to keep up with our growth plans, and had to be able to handle high volumes of complex transactions without performance degradation," says Marwan Madanat, Spree.com's vice president of information technology. So, after beating out similar servers from Digital and Compaq, Spree.com chose HP's Intel-based NetServer LH Pro and NetServer LX Pro systems and HP 9000 Domain Internet servers, because they showed no performance degradation during the company's robust tests of the effect on servers of indexing the database while also supporting browsing, searching, registering and purchasing and other user functions.

"Our systems will change constantly, but the technology they rest on had better be bedrock," points out Madanat. "That's why we went with HP." Lance Roncalli, vice president of business development for Spree.com, says another key element was the speed with which HP was able to offer solutions that could get Spree.com up and running as the first cooperative retailer on the Internet, something he thinks will help the company gain immediate market share. Requirements included the ability to build a Website with virtually unlimited capacity to add stores and services, and with the ability to support 2,000 visitors per day at launch, growing to 70,000 visitors per day in the first three months. "Partnering with HP enabled us to develop our IT infrastructure and launch our Website in only three months," Roncalli says. "HP got Spree.com to market first, and we expect HP to help us stay there."

solutions as "well thought out." And they "address many of the key issues facing both small and middle-market companies and large corporate users." On the small and mid-sized company front, the Yankee Group liked HP Domain Server's ease-of-use and personal service, while in the large corporate user area they lauded the solution's



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cross-platform support, best-of-breed functionality, manageability and security. Finally, the Yankee Group concluded that, "HP's integrated product and service offerings reflect a market understanding and

experience base — citing the fact that HP has the first and one of the largest corporate intranets — that "sets the company apart from its rivals." Any company using HP Domain Solutions are therefore ready to engage in widespread business-to-consumer or business-to-business e-commerce.

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SERVERS ARE IN AISLE 8

Currently serving more than 45,000 households nationwide, Peapod is powered by HP 9000-E class database servers and HP Domain hardware, services and support. Since consolidating database and application servers into one central location in Evanston, Illinois, in 1996, Peapod's IT staff has put together a system capable of handling an average of 267 simultaneous nationwide connects every hour, sufficient to support the 35,000 customers and 225 employees who need access. According to Tony Priore, Peapod's vice president of sales and marketing, the key to Peapod's success is immediate, easy access to customers the first time they try the system.

"Our marketing efforts are built around getting the customer to try us out, and then we focus on building their loyalty," Priore says, noting that the Peapod software is free (downloadable from the company's Web site or mailed out via diskette) and that customers pay a monthly fee of \$5 - \$7 depending on the order area plus a small percentage of the total order (generally around 10 percent) as a delivery fee.

Vendor satisfaction is also critical to Peapod's success, says Anne Marie Walsh, vice president of information technology. Peapod arranges exclusive marketing arrangements with one local grocery chain for each location, she says, and provides extensive data warehousing capabilities and transaction analysis systems to let Peapod's partners more effectively highlight and sell the most popular items online.

HP HELPS ADD PEAS TO THE POD

With plans to expand from seven metropolitan areas — Chicago, San Francisco, San Jose, Columbus, Boston, Houston and Atlanta — to ten and beyond in the near future, Peapod expects to be serving more than 100,000 households with average orders of \$110 each within the next year or so. The complexity of Peapod's data delivery task is only heightened by the fact that shoppers are allowed to sort items in over fifteen ways: by sale items; categories of foods such as cereals; brands displayed in alphabetical order or by size, unit, price or nutritional value, and so on. The results include a database with more than 26GB of mirrored data, and a data warehouse on a separate HP server of more than 12GB in size.

Named as the 69th fastest-growing private American company on the Inc. 500 list in 1996, Peapod projects a growth rate of 250% per year, based on the past five years. "To help us cope with Peapod's phenomenal growth rates, we looked for an IT partner noted for quality, reliability, stability, scalability and service," Walsh says. "We decided that no other database server vendor could meet those requirements better than HP."

"We looked for an IT partner noted for quality...no other database server vendor could meet those requirements better than HP"

Anne Marie Walsh, vice president of information technology, Peapod, LP.



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What would a global event be without its own Web site? The upcoming 1998 World Cup, an international event that will bring together millions of spectators, journalists, soccer players and sponsors, needs more than just a Web page.

Caroline Farmer

It needs a dynamic, multilingual site that captures the spirit and scope of the World Cup games in France. In addition, the French Organizing Committee, the collective braintrust behind the 16th World Cup, plans to exploit the capabilities of the Web to provide visitors with a source of entertainment.

WHOLE WORLD WATCHING

Since going live in May 1997, www.france98.com (the official Web site of the World Cup) has received more than 1.6 million visitors and more than 97.6 million hits. Site visitors in the first eight months hailed

from 150 countries, with nearly half a million from the United States alone. Japan was second, with more than 150,000 visitors, while a fair number came from France, the United Kingdom and Brazil. But behind every official sporting event Web site, there is a technology supplier. The technological infrastructure for the 1996 Olympics (including the well-known techno-snafus) belonged to IBM. But make no mistake about it: the 1998 World Cup belongs to HP.

And HP wants it to be on everyone's lips. "It's ramping as quickly as we thought it would," said Katey Kennedy, World Cup marketing man-

ager at HP. "What's interesting is the geographic mix. It's extremely international in nature, which is why it's such a great tool for HP, in terms of gaining exposure." The French Organizing Committee estimates that during the World Cup, which takes place between June 10 and July 12, the site will receive between 10 million and 20 million hits per day. So, high-availability is a critical issue.

As the official information technology hardware and maintenance supplier of the World Cup games, HP is providing the core of the World Cup online system with centralized server hardware that stores and feeds the

data for viewing by journalists and soccer fans around the world. "It's a way for us to reach many people who don't have access to the details," says Kennedy. EDS, France Telecom and Sybase are also working with HP.

The power behind france98.com is HP's content engine, a cluster of HP 9000 Enterprise Servers that act as a secure data repository for World Cup facts and figures. Information from the content engine is fed into the site as well as infofrance98, a secure intranet environment accessible only by accredited journalists. Systems include an HP Domain 9000 D350 Web Server and an HP Domain 9000 K460 data server. Both servers are located at EDS headquarters in Plano, Texas. A mirror site will be installed in Paris, and depending on site traffic and performance, a second mirror site may be established in Japan. The site also relies on a Sybase database, World Cup applications developed by EDS, and the global network of France Telecom.

THEIR CUP (SITE) RUNNETH OVER...

The French Organizing Committee provides the content. When users first enter the site, they must choose to surf it in either English or French. There are 300 pages and 1,000 images in each language. From the home page of www.France98.com, they can explore one of eight categories: News, Competition, Teams, Venues, Tickets, Playing Field, History and Hosts.

From the home page, visitors can also join the World at Play Fan Club. Membership allows site visitors to get involved in the World Cup, and to be eligible for contests and sweepstakes. Whether a visitor wants to know who scored the most goals in the 1934 World Cup, who played on the Hungarian team in 1954, or simply how to order tickets to the World Cup in France, you can find it at France98.com. Through its networked technology infrastructure, HP is helping to build a virtual community of soccer fans, players, and sports media.

Journalists and fans can find a wealth of information about the

World Cup 98, as well as the history of soccer and the World Cup. For example, in the News section, visitors can read top stories and late breaking news, as well as press releases and newsletters. In the History section, visitors can discover the history of the World Cup, from the first tournament in Uruguay in 1930 through the 1994 cup held in the United States. In addition, visitors can read about the history of football in France. For those visitors who are left wanting more, the recommended reading section suggests books of interest.

THEY SHOOT, THEY SCOOOOOORE!!

In the Competition section, users can also visit The Final Draw album, which highlights the tournament that serves as a preview for the World Cup. Site visitors can watch videos, read match statistics, and listen to interviews with coaches, team personnel, and French Organizing Committee members. france98.com

also offers visitors useful information about tickets and accommodations as well as participating teams, broken down by Group and Confederation.

The French Organizing Committee's intention was not only to provide useful information via france98.com, but to provide a source of entertainment. In the site's Playing Field section, for example, visitors can play the World Cup Trivia Contest, download one of three screen savers, take a Hall of Fame survey, and learn about Footix, the official mascot of France 98. In March, visitors will be able to order World Cup 98 memorabilia items such as T-shirts and pens. On a greater scale, HP's involvement in the World Cup 98 is helping to bring people from around the world together as viewers, spectators, participants, and competitors in this century's largest sporting event.

Caroline Farmer is a strategic analyst with the Conent Group (San Francisco, Calif.)

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High-Tech Vendor Defense System

GEC Marconi-Hazeltine Gets Prolific In Vendor Approval

Ken Deats

If you manufacture horseshoes or hand grenades for a living, pretty close may be close enough, both for you and your suppliers. If you manufacture radar and avionics systems, terrestrial and satellite communications, guided missiles and electronic warfare systems, and you are one of the world's largest defense electronic suppliers, pretty close may lose a war.

That's why when GEC Marconi-Hazeltine, Inc. of Wayne, N.J. decided to streamline their vendor approval process, pretty close was not close enough. "We evaluate our vendors very strictly on past performance," says Joe Puzino, senior analyst with the firm. "They are all scored on their ability to deliver high-quality components on-time."

GEC is a subsidiary of GE Corporation of Great Britain. A \$593 million NATO defense supplier, they maintain a Computer Associates' Ingres SQL vendor database on a HP 9000 running HP-UX 9.05. As many as 100 systems compo-

nent buyers on Windows 3.11 and NT workstations update performance statistics on each of their suppliers.

In the past, buyers had to plow through a single hard-copy report that listed several thousand vendor performance records. Before they could even start weeding out unacceptable suppliers, they had to first track down the report. "Our buyers couldn't work from their desks," Puzino added. "They first had to call around the

until paring the group down to a workable number.

"It was a very cumbersome process," says Puzino. To short-circuit the process, Puzino developed the Vendor Rating Reporting System (VRRS), an intranet delivery system that brings vendor records to the buyer's desktop through a GUI front-end. While the Ingres database stayed in place, the desktop technology evolved at a pace comparable to one of their electronic weapons systems.

Puzino developed the Vendor Rating Reporting System (VRRS), an intranet delivery system that brings vendor records to the buyer's desktop.

office to find who had the report, then go get it. They definitely didn't have the tools in front of them," to do their jobs.

To process a purchase request for a specific component, a buyer had to find the section in the report that dealt with that component then review the past performance for each vendor that had previously supplied it. After inspecting the performance specifics for those suppliers, the buyer made a subjective decision and either blessed or blasted each one

First came JAM, an acronym for JYACC Applications Manager. JYACC, a New York, NY-based consulting firm developed JAM as a two-tiered client-server development tool in 1985. JYACC, in September 1996, formed Prolifics, Inc. to develop and market new transactional three-tier and Web-based applications. That offshoot led to a suite of products designed to allow developers to capitalize on the expected push towards distributed and



Internet-based OLTP systems.

For Puzino, Prolifics brought a useful development tool in the form of screen and report wizards that automatically generate HTML and JavaScript. "That feature really enhanced my HTML skills. It made the development process a lot easier."

The end result for GEC Marconi-Hazeltine is a GUI front-end application that allows buyers to update vendor specifics and evaluate them from their desks, has eliminated the need for hard-copy output, has pared the number of active vendors in the database from several thousand to several hundred, and took only six weeks for Puzino to build.

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Don't Pardon These Expressions

As I already mentioned in part one, there are many commands and languages that use regexps.

They are used for different purposes by these different tools. Within a single command or language, there can also be different uses.

Luckily, there are only two categories of regexp use: to determine if there is a match; or to address the specific portion of a string or line that is matched. Note that some tools will apply a regexp to a string, typically saved as a variable. This is allowed in many programming tools, like **python**, **perl**, **JavaScript**, and **awk**. Other tools will only apply a regexp to a line of text within a file, like **sed** and **grep**.

GOT A MATCH?

Many tools, and uses of regexps within a tool, only return a true or false value from a regexp use. This usage is for determining if there is a match on a particular line for a regexp (or in some cases, in a particular string). Often this true/false return is used to determine if a command will be applied to the line being tested. The simplest example would be the **grep** command. If a line contains a match for the supplied regexp, the line is printed. If the match returns false (no match), the line is not printed. For example, the command:

```
grep car orderlist
```

would print any lines in the file **orderlist** that have a match for the regexp **car** on them. In fact, this regexp is limited to literal characters, a search string, with no special regexp charac-

ters in it. It would also match the **car** in **carrots**. If this regexp were used in a true/false test programatically, it would return true when checking to see if a car was ordered, even though you had really ordered only carrots. You can see the reason for writing a more accurate regexp. A point to keep in mind about binary match (true/false) usages for regular expressions, is that we don't care how much, or which portion of a line or string is matched. Only if there is a match -- or not.

The real power of regular expressions comes when you want to address a portion of a line or string of characters. This addressed portion of the string can then be acted on in some way. How you can act on the addressed portion is determined by the command being used. For example, in **vi** you can substitute the matched string with another string using the **s** command. For example:

```
s/car/nice fast car/
```

substitutes **nice fast car** for **car**. As mentioned before, it would also change **carrot** to **nice fast carrot**, which might not have been what we wanted. Other tools also allow us to use regexps to match portions of a string or line and have them returned as a set of strings (array) and addressed for use as arguments to operators.

As a much more complex and powerful example of regular expression usage, the following line of perl code

would address all floating point numbers in a string and change them to a rounded version of that number:

```
s/[+-]?[0-9]+[.][0-9]+/int($&+(.5*($&<=>0)))/eg;
```

For example, it would take the string:

```
11.67X 7.134Y -18.67 -1.13
```

and change it to:

```
12X 7Y -19 -1
```

Though this example appears very complex, it is not. The substitute operator takes a regexp

```
([+-]?[0-9]+[.][0-9]+)
```

and allows evaluation (the **e**flag) of an expression

```
(int($&+(.5*($&<=>0))))
```

using the portion of the string the regexp matched (**\$&**). In fact, the expression is evaluated against all of the matches (numbers) because we used the **g** flag. The point of this example is that if you can write regexps to address the text you want to act on, the rest of the task is often easy. In this case, everything except the regexp itself is **perl** syntax.

Because there are so many different tools that use regexps, there are also many different ways to accomplish the same task. For now, we will concentrate on the regexps themselves, not the different ways that the various tools use them. For now, be sure to remember that the regexp **x** does not match the line **4x 37y 5xyz**. It matches exactly the second character in the string. The command **grep x** would print the whole line because there was

a match; but had we used that regexp in a substitute operation, only the matched substring (the x) would be changed.

NOW FOR THE TRICKY PART

Well, actually just the basics for now, we will leave the more complicated, and less widely found characters for the next part of the series. Regexps are comprised of both literal characters and meta-characters. Literal characters are characters that have no special meaning (e.g., all the alpha-numeric characters). Sometimes a regexp is comprised of only literal characters, as in the `car` example above. Meta-characters are the ones we will focus on, as they are what supply the *programmatic ability* to regexps. Meta-characters come in four flavors:

1. Position matchers (anchors)
2. Single character matchers
3. Quantity modifiers
4. Control, usage, and grouping

The tricky part is that sometimes you want to match a meta-character literally. For example, if you want to match a period, you cannot just put `'.'` in the expression, as that character has a special meaning, so you must either use `[.]`, or `\.` to escape the special meaning and match a literal period.

POSITION MATCHERS

Position matchers or anchors do not match anything in the string or line you are testing, *they match only a location*. The availability of these characters varies widely among the different commands and tools. However,

- ^ beginning
- \$ end

are available in all regexp implementations.

For example, `^car` only matches the letters c-a-r when they are the first three in the line or string being tested. `^car$` means only match if the whole line or string is exactly the string `car`, because we said it must begin with a c (`^c`), end with an r (`r$`), and only an a can be between the c and the r.

The `^` and the `$` characters only have their particular meanings when they are used as the *first and last characters* (respectively) in a string. For example, the regexp `x^y` means match

those three characters literally, because the `^` was not the first character in the regexp.

On the other hand, a `$` used other than as the last character can have different meaning depending on the tool used. In some tools, it means to de-reference a variable. Also, the `$` in some tools actually matches the place just before a newline character, rather than the very end of the string.

Other anchor characters are used to delimit words; that is, they match the place just before the beginning or end of a word. They are not supported by all tools and are represented by different characters in different tools. Confusing, huh?

Here are the more common 'word delimiter' meta-sequences (they use two characters, not one):

- \< beginning of word
- \> end of word
- \b boundary of word

Note that the `\b` matches a boundary, thus it can be used at the beginning or end of a word. To fix our 'car' verses 'carrot' problem from earlier, we could have written the substitute command as:

```
s/\<car\>/nice fast car/
```

so that we only changed the 'word' car, instead of the first few characters in the word carrot. The above would work in `vi`. In `perl` we would have to write:

```
s/\bcar\b/nice fast car/
```

because `perl` does not support the `\<` or `\>` characters (and `vi` does not support the `\b` characters)!

Anchors can also be useful as the complete regexp. For example `^used` as the regexp in a substitute command would add a couple spaces to the beginning of a line or string:

```
s/^/ /
```

SINGLE CHARACTER MATCHERS

The trick to remember here is that these meta-characters and meta-sequences will always match exactly one character, or fail the match if there is not a character for them to match.

- .

[] Match any character (or range) enclosed

Like everything else in regexps, there are exceptions. In some tools, `.` will match newlines; in other tools, it won't. An example of using `.` would be when you need to match the two characters that come after the string 'Result: '. For example,

Result: ..

Note that we matched the literal string 'Result: ' plus the next 2 characters. Supposing that those we only want to match when those 2 characters are numbers, we might have written:

Result: [0-9][0-9]

Note that we could have written the 'digits' as `[0123456789]`, but that would be ridiculous, so 'ranges' of characters are allowed. The most common are `a-zA-Z0-9`. Many tools allow abbreviations of these, for example, in `perl`, we could have written:

Result: \d\d

to abbreviate the digits with `\d`. Several tools allow `\w` as an abbreviation of `[a-zA-Z0-9]`.

Generally, any character inside the brackets loses its meaning. Thus, you could match a literal period with `[.]`. Conversely, some characters have, or can be given special meaning inside brackets. For example the hyphen means a range of characters, so if we wanted to match a hyphen or an underscore, we would have to escape the special meaning of the hyphen: `[_]`.

Also, we can supply a backslash to add meaning to characters (which ones varies by tool): `[t\n]` means match a tab or newline in many tools. Usually, the single match characters are commonly used in combination with the quantity modifiers, which we will look at next month.

Match wits or regexps anytime with Fred at fred@fame.com.



A High Five Version of NT

If you believe the marketing hype, Microsoft is "betting the company" on Windows NT 5.0. That seems unlikely.

But NT 5.0 is going to be big. I'm not talking about the innumerable number of TV commercials, magazine columns or bazillions of Microsoft profits. I'm talking megabytes here.

My installation of the beta required 300MB for the operating system and the dozens of features I installed. The official requirements call for a minimum of 125MB free space. But that's hardly surprising — NT 5.0 now consists of over 20 million lines of code — that's triple the size of NT 4.0.

Here's some of the new features those extra lines of code are providing:

Active Directory. Active Directory (AD) is the most significant new management feature in NT 5.0. It is meant to ease the problems associated with managing many domains and domain relationships under the current domain scheme. One of the problems with domains is that user information resides only on the Primary Domain Controller (PDC). Although the Backup Domain Controller (BDC) contains a copy of the user information, updating passwords for example, requires a connection to the PDC.

This creates a bottleneck at the PDC. Under NT 5.0, information can be updated at any domain controller. The controllers then perform what's called a *multimaster replication*, a new feature. Under NT 3.x and 4.x, replication was one way (PDC to BDC). Now replication can take place between

many controllers simultaneously.

The centerpiece of AD is the Global Catalog (GC). An entire enterprise will have a single GC, even if it has many domains (the GC can be replicated throughout the network to insure availability). The GC contains abbreviated information about objects, such as user information and domain controller location. While logged onto one domain, using a resource on another domain requires being authenticated.

Without an established trust relationship, this transaction takes time. The GC should speed these kinds of operations and eliminate the need for complicated trust relationships. Now the bad news: AD will work in NT 5.0-only networks. Given the size of some organizations, it may take quite a bit of time to convert all the domain controllers to NT 5.0 to take advantage of AD.

64-Bit Addressing. NT 5.0 will support 64-bit Very Large Memory (VLM) addressing. VLM addressing supports up to 32GB of RAM and thereby improves application performance. NT's current 32-bit memory addressing tops out at a mere 4GB of RAM. But this is *not true 64-bit computing*. Parts of NT, such as video drivers, will still be 32-bit. Initially, this feature will complement Digital's Alpha CPU, but is scheduled for simultaneous release with the Intel Merced version of NT in 1999.

Management Console. The new Microsoft Management Console (MMC) is designed to provide a common interface for system administrators performing management tasks. MMC is used with custom programs called snap-ins. The snap-ins provide a management interface for various applications and services. Third party providers may also provide snap-ins.

MMC is customizable so multiple consoles can be created. For instance, a user management console may be created with the snap-ins for user manager and policy editor. MMC is available now with Internet Information Server 4.0 in the Windows NT 4.0 Option Pack (www.microsoft.com/ntserver).

Zero Administration Windows. ZAW is an effort to reduce the total cost of ownership associated with managing an NT network. It provides features to automatically install the software clients need, eliminating the need to individually install particular applications. For example, everyone in the SALES group gets Word and Excel. User SMITH logs on and is a member of the SALES group. He wants to open an Excel file, but has never installed the software.

If you're using NT 4.0, you'll see "I don't know how to open an .XLS file. Open it with one of these:" then you get a choice of any software you currently have installed. NT 5.0 is smarter than that: it searches in the new network Registry called the Class Store. It discovers that you should have access to Excel and offers the option of installing it from the network. The system administrator no longer has to schedule an application install and the user gets access to the data more quickly.

Disk Management and NTFS 5.0.

Functions such as creating, extending or mirroring a volume will no longer require shutting down NT. A new utility called the NT Media Services is provided to mount and dismount tapes and removable media. Support is

NT's current 32-bit memory addressing tops out at a mere 4GB of RAM. But this is *not true 64-bit computing*. Parts of NT, such as video drivers, will still be 32-bit. Initially, this feature will complement Digital's Alpha CPU, but is scheduled for simultaneous release with the Intel Merced version of NT in 1999.

included for devices such as robotic tape changers. A new version of NTFS is provided to speed performance. NTFS 5.0 also supports disk encryption and per-user disk space quotas.

Plug and Play and Win32 Drivers. Plug and Play is sometimes downplayed by system administrators as a feature for consumers. Anyone who's wrestled with installing esoteric new hardware installations will appreciate NT's new ability to automatically detect new hardware devices.

But the Plug and Play in the beta version of 5.0 is not ready for prime time. It detected a new Creative Labs sound card automatically, but couldn't install the correct drivers. As the new Win32 Driver Model gains acceptance, these problems should go away. The new Driver Model allows device drivers to be written for both Windows 98 and NT 5.0, eliminating one of the nagging problems with NT, lack of support for new and diverse hardware peripherals.

Backup. The backup utility is much improved. Support is finally included

for non-tape backup devices, including network drives, removable disks such as Iomega Zip drives and recordable CDs. A new user interface including backup and restore wizards feature an Internet Explorer look and feel. Automated scheduling was not included with the first beta, but is planned for the final release.

These are just a few of the new features in 5.0. It also supports other standards, such as the Universal Serial Bus, Digital Versatile Disc, Fibre Channel, Point-to-Point Tunneling Protocol, and Asynchronous Transfer Mode, allowing NT to work with the latest hardware. Originally NT was scheduled to ship the second quarter of 1998, but current plans now call for a fourth quarter shipment.

In my opinion, it should be worth the wait. What do you think?

Ryan Maley, information systems manager for a midwest manufacturer, is a Microsoft Certified Systems Engineer. He can be reached at ryan@maley.org or find him expounding in HP Pro's Web site forums at www.hppro.com.



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APPLICATIONS DEVELOPMENT

CA And Fujitsu Ship Jasmine

Computer Associates International, Inc. (CA) and Fujitsu Limited shipped Jasmine, an object solution for building next-generation systems over Internet and client-server computing environments. Jasmine includes comprehensive class libraries for creating and managing multimedia data, including bitmaps, animation, audio and full-motion video. Jasmine can be run in Web browsers built in Microsoft Internet Explorer and Netscape plug-ins. The Jasmine Application Development Environment (JADE) offers a code-free multimedia authoring and application development environment with tools for designing and debugging sophisticated applications. Jasmine also provides support for the OLE standard and ODBC. The initial release of Jasmine supports UNIX and Windows NT servers as well as Windows 95 and Windows NT clients.

►Contact CA, Islandia, NY at (516)342-5224.

►Contact Fujitsu Limited, Tokyo, Japan.

Cayenne Software Releases ObjectTeam Version 7

Cayenne Software, Inc. released ObjectTeam version 7, featuring compliance with the OMB UML 1.0 software development standard for modeling constructs and notations. ObjectTeam 7 includes improved reverse engineering and code generation. Data models and object models can now co-exist and can remain in sync across diverse development projects. ObjectTeam 7 is available for Windows NT, Windows 95, Sun Solaris,

IBM AIX, Digital Alpha and HP-UX.

►Contact Cayenne Software, Inc., Bedford, MA; (800)528-2388; (781)280-0505.

Information Builders Introduces Enterprise Component Broker As Part Of EDA 4.1.0

Information Builders, Inc. has introduced Enterprise Component Broker as a part of EDA version 4.1.0. Enterprise Component Broker version 4.1.0 is a Java application server that allows developers to make use of the Java language and JavaBeans component model from JavaSoft to visually develop and deploy Internet-based applications. The applications then interact with existing application programs or enterprise data, including CICS and IMS transactions and more than 70 proprietary databases or file structures via EDA middleware. Enterprise Component Broker is implemented in accordance with the object bus specifications of OMG's CORBA 2.0 and supports CORBA. Enterprise Component Broker is available for Windows NT, AIX, Sun Solaris and HP-UX.

Enterprise Component Developer, including Symantec's Visual Cafe and a visual configuration tool, costs \$3,200 per development workbench. Enterprise Component Broker is priced based on platform and number of users. Prices begin at \$150 per seat for up to 1,000 users.

►Contact Information Builders, Inc., New York, NY at (212)736-4433.

Visual Enabler 2.0 Now Available From Softlab Enabling Technologies

Softlab Enabling Technologies announced

Visual Enabler 2.0, a new version of the software configuration management (SCM) toolset for Enterprise Windows application developers. Version 2.0 provides developers with all the information needed to build and maintain Visual C++, Visual Basic 5.0 and Visual J++ systems, including full support for Developer Studio .dsp and .dsw files. Visual Enabler 2.0 also includes One Button Build, enabling developers to automate complex builds for Visual C++, Visual Basic 5.0 and Visual J++ applications, including scheduling, customizable exits and automatic team notification. No proprietary utilities are required, no programming is necessary and no makefile modifications are necessary. In addition to supporting the Windows NT server, Visual Enabler 2.0 now supports IBM AIX and HP-UX as well.

►Contact Softlab Enabling Technologies, Atlanta, GA at (770)668-8811.

DATA WAREHOUSING

Cognos Business Intelligence Tools Integrated With Sybase's PowerDesigner 6.1 WarehouseArchitect

Cognos announced that Sybase's PowerDesigner 6.1 WarehouseArchitect directly supports the creation of Impromptu catalogs and PowerPlay source files. This enables enterprises to develop data warehouses and simultaneously deploy Cognos' business intelligence tools. Deployment time for data warehouses is reduced by the integration of the tools. PowerDesigner 6.1 introduces productivity features and enhancements, integrated interfaces for OLAP tools and expanded Internet capabilities for data-driven Web site generation and Web-based reporting. The integration of Impromptu and PowerPlay with WarehouseArchitect, which is a module within PowerDesigner 6.1, allows designers to send warehouse design information to decision support administrators for querying, reporting and analysis of corporate data.

►Contact Cognos, Burlington, MA at (800)426-4667; (781)229-6600.

Contact Sybase, Inc., Emeryville, CA at (800)8SYBASE; (510)922-3555.

UniPrise Releases Enhanced Version Of Access/DAL

UniPrise Systems, Inc. has released an enhanced version of Access/DAL data language middleware for Tandem's NonStop server platform and Tandem Windows NT servers. This release enables Macintosh

and Windows 95 and NT platforms to access NonStop SQL and Enscribe databases residing on Tandem servers. Tandem users can Web-enable or open their databases to other relational databases in an Extranet and Extranet environment by integrating with UniPrise's I/DAL middleware. Access/DAL is a high performance access SQL and API middleware toolset for enterprise decision support applications. It enables users to access data anywhere on a network, regardless of database vendor, server vendor and network protocol. Access/DAL can also assist in the development of data mining and data mart applications as a part of decision support systems being developed. Access/DAL provides client support for 16- and 32-bit platforms including Windows 3.11, Windows NT, Windows 95, UNIX, Apple Macintosh and Power Macintosh. It provides server support for Windows NT running SQL/Server with enterprise-wide Oracle, Informix, and Sybase databases. Access/DAL provides connectivity to MVS, AS/400, Sun Solaris, HP UNIX, IBM AIX, Open VMS, Alpha Open VMS, Digital UNIX and Windows NT servers, as well as Tandem servers.

►Contact UniPrise Systems, Inc., Irvine, CA at (714)864-2000.

E-COMMERCE

Cognos Releases DataMerchant

Cognos released DataMerchant 1.0, an E-commerce solution that securely packages, distributes and merchandises relational data over the Internet, extranets or intranets. Features of DataMerchant include: data access privileges which can be securely defined as "DataServices", each with unique access and data pricing profiles; ability for data consumers to subscribe to DataServices and shop for data using the DataMerchant Web Storefront; ability for data providers to offer secure ODBC connections over the Internet; ability for data providers to choose from several off-line and on-line billing options, and integrate their DataMerchant Storefronts with third party e-commerce solutions and in-house accounting systems; wizards that ease the task of defining data products and building DataMerchant Storefronts; data providers that quickly enhance DataMerchant Storefronts and integrate them in to corporate Web sites; trusted encryption technologies, crypto API and Secure Sockets Layer (SSL) integration that protect payment information and data during transfers. DataMerchant supports Oracle, Sybase, Microsoft SQL Server and most other databases through

ODBC.

Cost for DataMerchant 1.0 for Windows NT is \$65,000 per server.

►Contact Cognos, Burlington, MA at (800)426-4667; (781)229-6600.

Bac-Tech Systems Introduces Web Vision E-Commerce For Non-EDI Trading Partners

Bac-Tech Systems Inc. introduced Web Vision, a browser-based Internet connection enabling non-EDI trading partners to access any existing electronic commerce application. Web Vision allows any non-EDI trading partner or off-site sales representative to query the host's on-line database, send ANSI 850 purchase orders and receive ANSI 997 acknowledgments from the Internet. The orders and acknowledgments can be transferred directly and electronically into a company's order entry process. With any Internet browser and a secure password ID, users can exchange any ANSI X.12 transaction set 24 hours a day worldwide.

►Contact Bac-Tech Systems Inc., Cranston, RI at (800)336-4EDI; (401)946-3399.

MESSAGING & E-MAIL

V-Systems Announces VSI-WEB

V-Systems, Inc. announces VSI-WEB software an integral module of VSI-FAX that enables sending, receiving and viewing facsimile messages from any Web browser. Users connect to the VSI-WEB URL address from a Web browser, enter a name and password and can then check their personal inbox for received faxes, preview thumbnail views of any page and select individual pages for full viewing. Other available options include rotate, scale and print. Users can choose between standard and user-customized cover sheets and can attach additional files to an outgoing facsimile.

►Contact V-Systems, Inc., San Juan Capistrano, CA at (800)556-4874; (714)489-8778.

Net-It Software Announces Net-It Central Version 2.0.

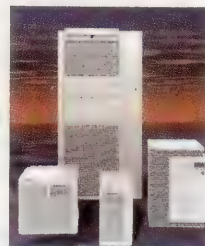
Net-It Software announces Net-It Central 2.0 which delivers critical documents directly to the desktop using Netscape Netcaster and Microsoft CDF "push"

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technologies. Netcaster and CDF channels are automatically created and maintained for "hand-free" enterprise document sharing with Net-It Software's Docucast technology. Included in Net-It Central 2.0 are enhancements to jDoc technology, most notably zoom, copy text and a new document toolbar for interacting with the jDoc container. The Net-It Central architecture has also been extended to support CentralTools, self-contained software modules which perform a specific document sharing function and plug into the Net-It Central application to extend the core feature set of Net-It Central. Net-It Central is available in three versions: the Starter Edition for \$1,995, the Standard Edition for \$4,995 and the Professional Edition for \$6,995.

►Contact Net-It Software Corp., San Francisco, CA at (415)551-0600.

NETWORK INTEGRATION

Hummingbird Has New Web Support For Exceed 6.0

Hummingbird Communications, Ltd. has new Web support for Exceed 6.0, its PC X server software for Windows. Users can now access any UNIX application from

their Web browser and can gain secure access over the Internet and increase X performance over WAN links. Exceed 6.0 also has new support for Jconfig, a Java-based management system. System administrators can now configure and manage Hummingbird applications and many generic desktop settings from any Java-capable browser.

►Contact Hummingbird Communications Ltd., North York, ON at (416)496-2200.

NETWORK MANAGEMENT

Packeteer Introduces PacketShaper 1000

Packeteer, Inc. introduces the PacketShaper 1000, an IP bandwidth management system that ensures priority transmission for business-critical traffic across Frame Relay and other WAN connections to an enterprise's branch offices or remote sites. The PacketShaper 1000 handles traffic over any WAN link speed of up to 384 kbps. The PacketShaper 1000 can be used by network managers to guarantee bandwidth within existing PVCs. It can be deployed by an Internet Service Provider (ISP) or a Competitive Local Exchange Carrier (CLEC) as part of a managed Frame Relay service and can be placed at the customer's location to guarantee Frame Relay service levels. The PacketShaper supports IP, SNA, IPX, NetBIOS, AppleTalk, HTTP, FTP, SMTP, NNTP and Java. The PacketShaper 1000 is being offered in five-unit bundles for \$15,000. Individual units are \$3,450.

►Contact Packeteer, Cupertino, CA at (408)873-4400.

FastLane Technologies Introduces Phoenix DRT For Windows NT

FastLane Technologies introduces the Phoenix Domain Reconfiguration Tool (DRT) for Windows NT. Phoenix DRT is designed to make enterprise-wide network transitions for Windows NT networks possible by managing common domain reconfiguration problems and automating the entire domain reconfiguration process. Phoenix DRT is used to migrate users, migrate global groups, update local groups, adjust resource and user access control lists, change user rights and move computer accounts to the target domain. It is powered by FINAL, FastLane Technologies' scripting language for mass enterprise management. Cost for Phoenix DRT is \$12.00 per account.

►Contact FastLane Technologies, Halifax, Nova Scotia at (800)947-6752; (902)421-5353.

NetBalance Ships IT Ledger

NetBalance, Inc. is currently shipping IT Ledger, a decision support system that provides corporate and IT managers with a complete financial picture of their IT enterprise assets and costs on a continuous basis. IT Ledger provides comprehensive, dynamically updated data on life-cycle costs for assets from sources across the enterprise, including corporate general ledger systems, human resources applications and existing asset inventory software. IT Ledger client runs on Windows 95 and Windows NT platforms. IT Ledger server components require Windows NT server; the repository can reside in any Oracle or SQL Server database. Cost for IT Ledger starts at \$40,000 for a three-user license capable of monitoring up to 1,000 desktops and ranges upward depending on system configuration.

►Contact NetBalance, Inc., Gaithersburg, MD at (301)948-8506.

WORKFLOW/DOCUMENT MANAGEMENT

CrossWind's CyberScheduler Provides Intranet Scheduling Across NT And UNIX Environments

CrossWind Technologies, Inc. announced NT support for CyberScheduler, CrossWind's Web-based calendaring and scheduling product. Support for NT completes the cross-platform offering for CyberScheduler; CyberScheduler is also available on most UNIX implementations, including Linux. CyberScheduler is an enterprise software distribution that includes Web access, native cross-platform clients for enterprise-wide deployment, cross-platform servers for multi-platform environments and system administration tools. It provides a graphical browser-driven interface that can be used with multi-platform Synchronize client software for Windows, Macintosh, Motif and ASCII. CyberScheduler supports any HTTP server including Apache, Microsoft ISS and Netscape Enterprise Server.

CyberScheduler is licensed for a one-time flat fee of \$100 per user with no extra charges or requirements for special servers, e-mail or database engines. Customers have the flexibility to decide when or whether to install upgrades. CrossWind protects customers' past investments in CrossWind products by providing cross-release compatibility.

►Contact CrossWind Technologies, Inc., Santa Cruz, CA at (408)469-1780.

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Hummingbird Introduces Common Ground Paper 2Web

Hummingbird Communications, Ltd. introduced Common Ground Paper2Web, a product enabling Common Ground users to scan paper documents directly to Digital Paper and automatically post them on the Web. Paper2Web can interface with any scanner and can take data sheets, manuals, meeting minutes and other paper documents and post them on the corporate intranet or Internet.

►Contact Hummingbird

Communications Ltd., North York, ON at (416)496-2200.

IntraACTIVE Announces InTandem 3.5 Groupware Solution For Instant Intranets and Extranets

IntraACTIVE has announced InTandem 3.5 groupware solution, which includes a suite of integrated, interactive applications. InTandem has project management, calendaring, group discussion, news, contact management and file sharing - all of which can be accessed and manipulated from any Internet ready device. IntraACTIVE has added many new Web-based administration tools to InTandem 3.5, allowing administrators to add and delete users, set levels of access, change the user interface and perform other tasks using a Web browser. A suite of usage tracking tools and a new Projects application are also included. A full demonstration version of InTandem is available at www.demo.intandem.net.

InTandem 3.5 is available as an installed product or as a hosted service. Price starts at \$95 per user for a product license and \$26 per user per month for the subscription service.

►Contact IntraACTIVE, Washington, DC at (202)822-3999.

PRINTERS

TROY Systems Introduces the TROY 540 MICR Printer

TROY Systems Inc. has expanded into the midrange market with the introduction of the TROY 540 MICR Printer, TROY's first collaboration with HP's System Peripherals Operation (SPO). The 540 MICR is designed for medium to high volume (300,000 pages per month duty cycle) applications in environments where printers are operated continuously for long periods.

The 540 MICR features 600 x 600 dots per inch (dpi) resolution and a standard 840MB disk drive pre-loaded with 1,000 fonts. About 600MB of disk space

on the hard drive is available for customizing and storing company logos, signatures, user-installed fonts, electronic forms and other company requirements. Security features include the MICR Activation Card, which when removed will deactivate the printer's MICR mode and prevent the printing of unauthorized checks; and password-restricted user access. The TROY MICR Printer is priced at \$24,995.

►Contact TROY Systems Inc., Santa Ana, CA at (800)944-6757; (714)250-3280.

MULTIMEDIA

CTX Introduces VL710 17-Inch Monitor

CTX International, Inc. introduced the VL710 17-inch monitor, which provides a larger screen size while maintaining sharp text and detailed graphics. The VL710 displays a 0.26 dot pitch utilizing an Invar mask, flat square tube display, producing constant clarity within the 15.7-inch viewable area. On-screen digital display controls enable users to adjust the monitor's geometry and color. The horizontal scanning ranges from 30kHz to 92kHz; the vertical refresh rates span 50Hz to 160Hz. The VL710 draws less than 6 watts of power in off-mode. It complies with universal safety regulations and carries and Energy Star rating. It is shipped Windows 95, Plug-&-Play ready. Cost for the VL 710 is \$549; it is available at electronics and computer retailers nationwide.

►Contact CTX International, Inc., City of Industry, CA at (800)888-2120; (626)839-0500.

Informative Graphics Announces MakeTIFF

Informative Graphics Corp. announced MakeTIFF, a solution for companies standardizing on TIFF format and for users seeking a batch way of converting files to the archival format. MakeTIFF controls the launch of third-party Windows programs to convert native formats such as Office 97 files and AutoCAD DWG drawings to either single-page or multiple-page TIFF files. With MakeTIFF, TIFF files can be created from any Windows file, provided the authoring application is available and supports Windows print drivers. The resulting TIFF files are then compressed. MakeTIFF can be used for batch conversion or on a file-by-file basis. MakeTIFF operates on Windows NT 4.0. Cost for MakeTIFF is \$895 and includes program launch and controlling software and the Myriad viewing application.

►Contact Informative Graphics Corp., Phoenix, AZ at (602)971-6061.

Videonics Ships Python MPEG-1 Video Capture Device

Videonics, Inc. is now shipping its MPEG-1 video capture device, Python. Python enables PC and laptop users to send video e-mail (v-mail), create streaming video Web pages and add video to their multimedia presentations. Python connects directly to a computer's parallel port. A pass through port is provided for printer use. Users can trim video files to the exact size desired, add multiple video clips to a single file, adjust the colors of video clips and stills and manipulate the sound.

Python captures audio and automatically synchronizes it with video into a single MPEG-1 file with the user's existing sound card. Python can be used with any software that accepts MPEG-1 standard video or JPEG standard still-frame files. Video clips can be played with any standard MPEG player including ActiveMode for Windows 95 and QuickTime for Macintosh PowerPC. Windows 95 and PowerPC users can open and play a Python video from a CD, diskette, v-mail or web site, whether or not they have purchased Python. Suggested retail price for Python is \$349. Included is free bundled software from Xing, MetaCreations and Astound.

►Contact Videonics, Campbell, CA at (800)338-3348; (408)866-8300.

DISASTER RECOVERY & SECURITY

HP Ships VirtualVault 3.0

Hewlett-Packard Company has shipped the HP VirtualVault 3.0 operating system, a binary-compatible version of HP-UX that provides maximum security for browser-based applications. VirtualVault 3.0 is a secure runtime environment for Internet front ends that implement business applications including e-commerce, banking and confidential electronic collaboration. VirtualVault is designed to reduce the risk of a security flaw in the Web server or front-end application that may expose a corporation's information assets to hackers via the Internet. Features include least privilege, data partitioning, authentication, an indelible audit trail, Secure Application Front End (SAFE) capabilities, integrity protection for read-only files and tight system configuration.

►Contact HP, Palo Alto, CA at (415)857-1501.

Setting The FAQs Straight

"The alternative
to addressing
the Year 2000
will be going out
of business."

-- Kevin Schick,
The Gartner Group

What is the Year 2000 problem? The problem stems from the fact that many older computer programs use a 2-digit year (97 instead of 1997). This two-digit shortcut is a result of a time when storage space was at a premium in computers, so programmers did everything they could to save it. Therefore when a program calculates dates it uses this two-digit year.

So if you're calculating someone's age, you would do the following: if the person was born in 1950 you would subtract 50 from 98 (the current year) and get 48 years old. But look what happens in the year 2004. If a computer is still using the last 2-digits it would think that the current year is 04. Now subtract 50 from 04 and you get minus 46.

One example, in 1992 a woman was invited to join kindergarten class because she was born in '88; in fact she was 104 years old!

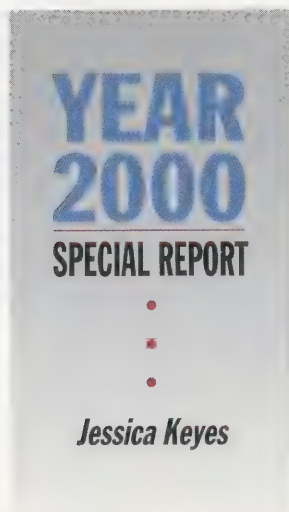
What are some of the different names people use for this problem? Year 2000 problem; Millennium Bug; Y2K problem.

How serious is the Year 2000 problem for business? According to Gartner group, 90 percent of the applications will be affected by the Year 2000 problem, and systems will crash, if the century problem is not corrected before 1999.

What are some examples of things that can go wrong?

- Many firms may have large numbers of computer tapes and files unexpectedly erased due to automated systems that haven't been told that time has reversed!
- Stores have empty shelves because their ordering systems are not working properly.
- Retirees might be denied Medicare and other benefits because their age is calculated to be too young.
- Planes being grounded because they're 99 years overdue for maintenance.
- Phone calls just after midnight being billed for 53 million minutes.
- Credit card balances skyrocketing into the millions due to haywire interest calculations.
- ATMs locking people out from their money.
- Incorrect mortgage and loan calculations.

Is this problem limited to just the Year 2000? Actually there is also a Year 1999 problem. Many people are aware of a related problem that might happen for all computer files created on Sept. 9, 1999. This date (9/9/99) was popular back in the 1980's as an expiration date for archived data that you wanted to have 'no expiration date.' And January 1, 1999 might be a big problem too as



some systems do calculations based on looking one year into the future which, you guessed it, is January 1, 2000.

Is this only a COBOL problem? The problem has little to do with the language used. Year 2000 problems have been found in practically every programming language from BASIC to FORTRAN. From C to ADA. Even the most modern of programming languages, Java, can have the problem. The problem is not with the programming language but in the way the programming language was used.

Do consumer-level PCs have a Year 2000 problem? Maybe. It depends on how old your PC is. To find out if your hardware can handle Year 2000 do the following:

1. Set the date to January 1, 2000.
2. Check that the date has been set.
3. Switch off the computer.
4. Wait a few minutes.
5. Switch the computer back on.
6. Check the date. It should be the 1st of January 2000.
7. Don't forget to reset your computer to the correct date and time.

Many PCs will fail this test and reboot to 04 January 1980. You should find out before New Year's Eve what's going to happen to your PC. You can visit the following Web page for the index to several PC manufacturer's Y2K compliance statements: www.wa.gov/dis/2000/survey/dt_hard for the index to PC manufacturer's statements on Y2k compliance. This is actually a ftp index from which you double click on a file name (e.g., ibm.htm) associated with the manufacturer.

What software problems will the consumer experience? Aside from software that the consumer can't control (e.g. mortgage, loans, etc.) he or she can control the software that runs on his or her PC. There's been a lot of discussion about this in the Y2K forums on the Web. For example, one person states, "I have Quicken Version 3 (IBM PC) running on MS-DOS 6. I found that when I set the date to 01-01-2000, Quicken interprets this as 1/1/1901." There are some many thousands of consumer oriented programs out there - and so many versions of each piece of software - no one really has a good handle on the extent of the problem.

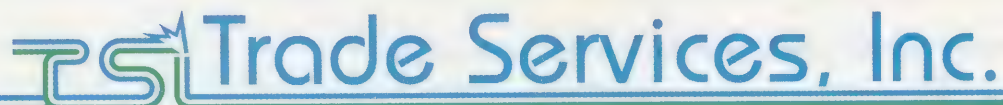
What can consumers do to protect themselves? If you have a home computer it's time to upgrade to a newer model for your hardware and software. If you can't or won't do this then at least call the various hardware and software manufacturers and find out if the version of hardware and software you are using is Y2K- compliant.

For those systems you can't control, such as mortgage and credit cards, start saving all statements and paperwork sent to you from the various banks, mutual fund firms and other institutions where you keep or borrow money. In the advent of a financial meltdown in the Year 2000, you'll have proof positive of your assets. Recently a commercial on the radio from one prominent mutual fund firm states that a customer calls in and asks that exact question, only to be reassured by the customer service rep that the Y2K problem is well in hand.

Jessica Keyes is president of New York City-based New Art Technologies, Inc. New Art is the developer of the NA-Series of re-engineering tools which are popular with those solving the Year 2000 problem. She can be reached at jkeyes@newarttech.com.

"Mainframers are in denial about what will happen a couple of seconds after midnight on December 31, 1999, when many thousands of mainframe programs handling critical business applications discover they don't know how to deal with dates that include the Year 2000"

- Jim Seymour,
PC Magazine



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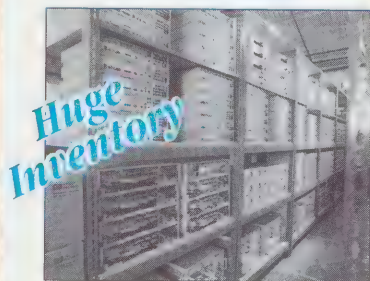
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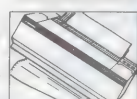
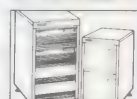
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EDI And The Internet: Are We There Yet?



Henry Bertolon,
CEO, NECX

A customer orders a product on-line. The order is transmitted — not to a physical warehouse — but to a virtual one, where the product is shipped from the closest source, anywhere in the world. No one has to wait for the purchase order to arrive — or for the order to reach the warehouse for delivery. No one has to re-key information about the order. In fact, there's almost no one involved in the entire process — just computers sharing transaction information. Electronic Data Interchange (EDI) makes all this happen and is the heart of E-commerce.

EDI connects you to your trading partners, enabling you to process transactions in a fraction of the time — for a fraction of the standard cost. More importantly, EDI lets you do business on a much higher level by creating truly integrated relationships with your trading partners. EDI creates a virtual warehouse, which eliminates the need to carry costly inventory, and this is just the beginning. EDI provides businesses with timely and accurate information, which leads to improved customer satisfaction. This information also means that businesses have the right data, which is essential for making better business decisions.

EASY? DATA INTERCHANGE

If it's that easy, why aren't more businesses adopting EDI? In order to share information, businesses need to transmit data in a highly structured format. Although most EDI transactions are based on the ANSI X.12 standard, EDI standards may vary from business to business. EDI may also be perceived as requiring a large initial investment because of the need for dedicated hardware and EDI translation software to run the process smoothly and efficiently. But there's new hope as EDI takes to the Internet.

Costs are reduced because both monthly Value-Added Network (VAN) charges and the administrative overhead associated with setting up trading partners at VANs are eliminated. By using the Internet to instantly transmit information, businesses can forget about delays associated with VANs. Using Internet EDI, data sits in mailboxes awaiting pickup (which allows trading partners to send and receive data without regard to schedules). Industry watchers predict that more businesses will adopt EDI because the Internet will drive costs down.

HAVE VAN, CAN DO

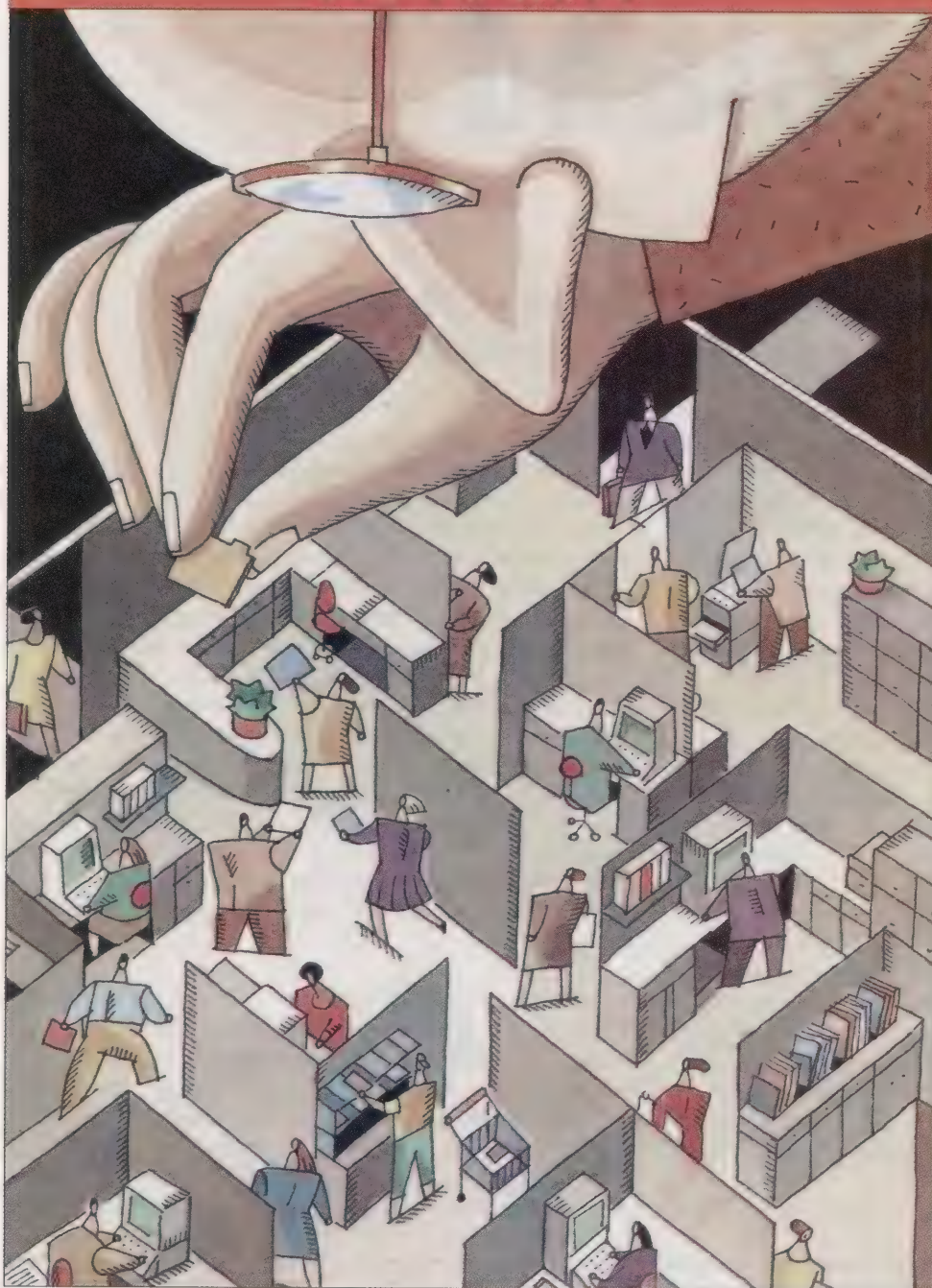
This holds true not only for EDI on the Internet but also for EDI using VANs. At NECX, we have EDI relationships over a VAN with all of our large trading partners and hope more will join us as we move EDI to the Internet. There is still some hesitation as some trading partners wait for the technology to evolve to address security and reliability concerns before they make an investment in EDI.

We work in an industry that requires a lot of heavy lifting to succeed. EDI has lightened some of that load, so yes, EDI is worth the effort. With EDI, companies realize substantial savings in time and money, which translates into savings of time and money for their customers. With EDI, companies can offer the latest pricing and availability information on their products to their customers and deliver orders faster than ever. The bottom line — you have more satisfied and loyal customers, and you succeed while your competition may not.

HP 3000

SOLUTIONS

WEB-TO-HOST



Integration

◆ Coexistence

◆ Migration

No Host Is An Island

By Mike Yawn,
George Stachnik and
Perry Sellars

Keeping pace in a changing IT environment can seem like winding through a maze. Here's some thoughts on finding your way with a legacy host.

Make The Most Of Web-To-Host

By WRQ, Inc.

Thinking of using your legacy host as a server on an intranet? WRQ, Inc. has some ideas on getting started.

Relevant Products

From 3K Associates
Springfield, VA
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- NetMail/3000
- DeskLink Gateway

From Minisoft
Snohomish, WA
tel: 800-682-0200 or 360-568-6602

- Javelin
- FrontMan Webpage Server

From WRQ, Inc.
Seattle, WA 98109
Tel: 206-217-7500

- Reflection V6.0

No Host Is An Island

Thoughts On Integrating A Legacy System In A Changing IT Environment

Here's an interesting quotation: "Today, more and more system managers are feeling rather embattled. For some reason or another, the systems that they have managed, maintained and supported are becoming obsolescent. Or so they are being told. Time and time again in User Group meetings all over the world the question arises, what are we going to do with our systems?"

What systems are being talked about above? Is it HP 3000 users bemoaning the industry's interest in UNIX? Or is it OS/2 users worried about the move to MS Word? Or could it be UNIX users worried about the move to NT? The fact is that all operating systems are becoming obsolescent. Sooner or later, every operating system is going to be replaced. No operating system, database, chipset or platform represents the be-all and end-all of the computing industry.

DO THE "RIGHT" THING

What does this mean to you? In the not so distant past, system buyers focused on choosing the "right" operating system — that is, the "one that wasn't going to go away." Companies talked about "strategic" operating systems. The cruel fact is that regardless of what operating system you're using, one day it will "go away." It's no good wasting your time trying to figure out which one is "right." There are far more important considerations.

- Should we centralize or distribute our system?

- Is the client-server movement practical?
- Will we improve our information systems by going to a client-server environment?
- Where does my MPE/iX system fit into this equation?
- Why would I want to introduce UNIX or any other platform into my MPE/iX environment?

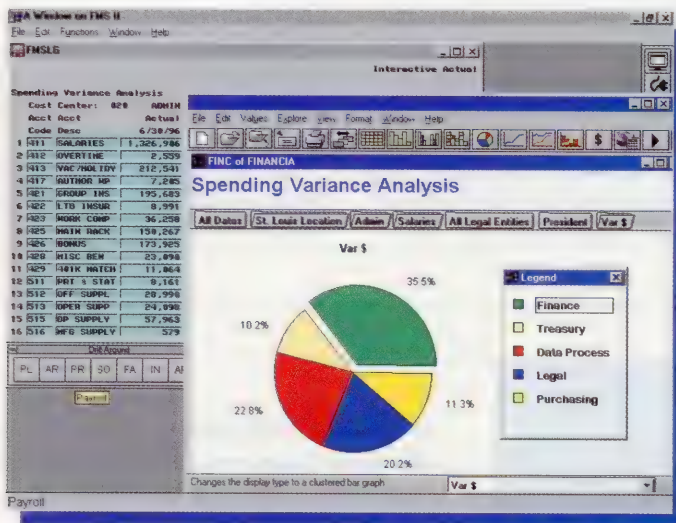
If your MPE/iX system is meeting all your needs, then there is little need for you to worry about using anything else. Note the operative word is ALL. To its credit, MPE/iX is one of the most robust operating systems on the market today. On the other hand, little new application development is taking place on MPE/iX. Most of the few new applications that have appeared on the HP 3000 over the last few years were developed on UNIX platforms and ported to MPE/iX using Oracle or the POSIX shell. For every new HP 3000 application, there are dozens of new applications for UNIX and many new applications for NT as well.

PLATFORM COHABITATION

Today, many HP 3000 users are putting UNIX systems in place, not to replace their HP 3000, but to supplement it. A company that's running a manufacturing application on an HP 3000 might choose to use a UNIX-based financial package or move their program development efforts to a UNIX platform. By using a UNIX system for in-house development you can effectively build a "firewall" between

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The HP 3000 can make a great Web server. If you are currently using an HP 3000 as your central server, two options you have to migrate your data to are either Oracle or Ingres, or you might choose to use IMAGE/SQL or ALLBASE. Or you can use POSIX, C, MicroFocus COBOL and other languages as tools.

your production and development environments. Another attractive aspect of UNIX is the availability of client-server database management systems. A few, like Oracle (and an older version of Ingres) are available on MPE/iX. But many others are not: including Informix, Sybase and ADABASE. Today, Oracle provides a product called "Oracle Transparent Gateway" that make it easy to integrate Oracle databases with IMAGE and ALLBASE. This technology is

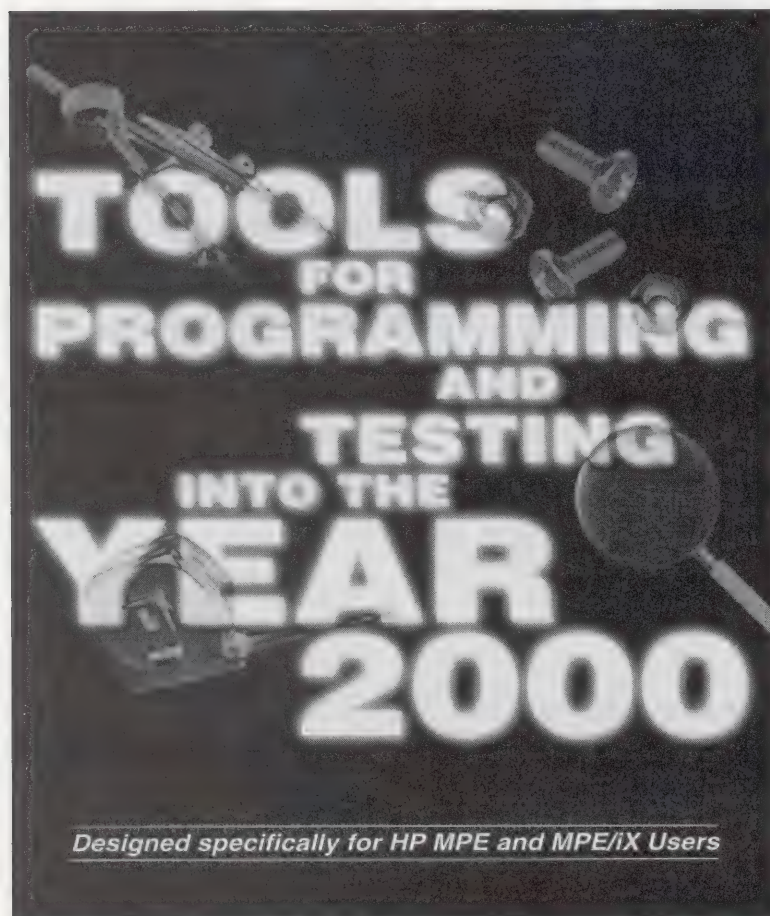
useful for integrating Oracle-based applications running on an HP 9000 with IMAGE/SQL-based applications running on an HP 3000.

A much-discussed alternative to using UNIX systems together with HP 3000s is getting rid of the HP 3000 and moving everything to UNIX. The low cost of UNIX hardware seems to make this an attractive alternative. Porting traditional proprietary MPE/iX applications to UNIX can be difficult, time consuming and costly.

Few application providers have done so successfully. What's worse, some customers who have "bit the bullet" and moved their HP 3000 processing to UNIX completely have discovered that they did not get all of the benefits they expected once the conversion was complete. UNIX hardware is cheap, but the low cost of hardware is often offset by the costs associated with managing UNIX systems.

But UNIX has forced standards on the industry, thereby allowing many different platforms to coexist. With POSIX, applications are much more portable. TCP/IP is fast becoming the LAN protocol of choice with its ease of use being one of the foundations of the Internet. SQL and ODBC allow virtually any DBMS to communicate with IMAGE and ALLBASE.

So, the positives far outweigh the negatives when deciding whether to introduce UNIX into your MPE/iX



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environment. Take the time to evaluate the issues surrounding going completely to UNIX, Windows NT or staying completely on MPE/iX. By taking full advantage of what is available today with an eye toward the future you will insure your information systems success over the long haul.

HP 3000

CAUGHT IN THE WEB

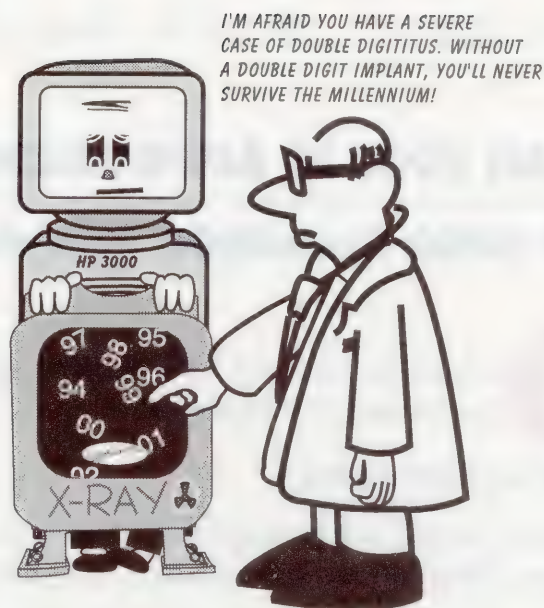
One of the key items today is the availability of Internet access. The HP 3000 can make a great Web server. Taking the HP 3000's outstanding security and its quick and robust recovery from power failure it can provide the sturdy server that is required today. If you are currently using an HP 3000 as your central server you already have most of the data there. Use this data storage point. Two options you have to migrate your data to are either Oracle or Ingres, or you might choose to use IMAGE/SQL or ALLBASE to keep your current database intact. Or you can use POSIX, C, MicroFocus COBOL and other languages as tools to port your current applications as well as develop newer network-centric applications.

The challenge facing each of us in the information industry is to use each platform — MPE/iX, UNIX or Windows NT — to their fullest and provide coverage for the shortfalls. An open system is not purchased, it's built. And it takes time to build it correctly. Many of our HP customers use open systems to their fullest. These forward thinking customers are leading the way into the future with great ideas that are inspired by the opportunities that open systems can provide.

Excerpted from:

"The Legacy Continues": Using the HP 3000 with HP-UX and Windows NT

Mike Yawn,
George Stachnick,
Perry Sellars
Prentice-Hall 1997.



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Avoid Changes to Display Screens and Reports

Expansion of date field sizes will likely require redesigning display screens and reports.

Simplify Coordination of a Year 2000 Solution

Windowing can greatly simplify the Year 2000 problem by eliminating many of the complex issues involved in coordinating the conversion of all programs and processes that access the same data.

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Make The Most Of Web-To-Host

The burden of delivering more information to employees rests squarely on the shoulders of IT. In the past, options were limited to loading more software onto hundreds or thousands of desktops — a costly, labor-intensive undertaking. But today, thanks to Web technology, some new, low-cost alternatives are available. For starters, IT is rapidly deploying intranets to give users fast, easy access to information on a variety of servers. And now a new class of Web-to-host products is helping IT grant users access to the wealthiest corporate data banks of all — legacy hosts. Consequently, these users require information that is current and instantly available.

Web-to-host solutions run on the server or the client, or both. Server-run applications maintain the host connection and send a presentation applet to the client. Client-run products are downloaded to the client on demand, then make direct connections to the host, rather than being routed through the server. While server-run solutions may be preferable for remote access, the applet downloaded to the client is smaller than those that are client-deployed, making for better response time. Client-run solutions are less risky and more cost-effective.

Servers can be bottlenecks, depending on the number of users needing simultaneous access and the number of applications being accessed. To accommodate more users, you may find it necessary to add more Web servers —

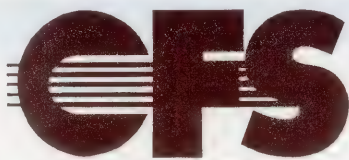
increasing your costs significantly. Also, if your server goes down, your company will pay. If a user can't access the necessary host data, then the user loses productivity until the problem is fixed and IT loses as they scramble to assist. If that user performs customer service activities, direct sales, or other revenue-generating tasks, this lost productivity can quickly translate into lost revenues for the company.

JAVA VERSUS ACTIVE X

With direct client-to-host connections, there are no performance bottlenecks, and host connections can be maintained despite problems at the server. The bottom line is that as the cost of deploying, managing, and supporting applications on local and remote computers rises, both Java and

THE YEAR 2000 CRISIS

You may not be able to stop the march of time, but you can make a smart move by using Web technology to give users access to the host information they need in order to be productive. So while you're expending time and effort to avoid potential cyber-disaster at the turn of the century, be sure to be on the lookout for a Web-to-host product that's easy to implement and that won't drain IT resources. With the right Web-to-host product, you can expand host access and improve your flow of information, while controlling costs and maintaining a sense of order in your enterprise. And you can do it without overhauling your infrastructure or investing in new network servers. We may be losing the century that saw the birth of the computer age, but that doesn't mean we have to lose our cool too.



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HP 3000 SOLUTIONS

ActiveX allow applications to be centrally controlled, thereby reducing user support costs. But your greatest cost-cutting results will come from choosing the technology that is most compatible with your existing desktop hardware and the expertise of your development resources.

As many developers have already discovered, Java is a compact and powerful programming language, designed for distributed networks, that lets developers offer more functionality within a Web page. Among its many attributes is its platform independence, so Java applications can run on a variety of PCs, Macs, existing workstations, and NCs.

They can also work with a variety of servers, from Windows NT to UNIX. But because Java is a new language, many organizations may not have development staff with Java experience. Whether you have to hire Java developers or train your existing staff, it'll cost you. And you should weigh this cost against your ability to leverage existing desktop hardware and deploy new NC hardware with Java.

Unlike Java, ActiveX *is not a development language*, but a set of technologies that allow applications to work together. This includes applications that are run from a central location (server). But ActiveX is a Windows-specific technology that was designed for use with traditional Windows applications running on a PC. While ActiveX makes it possible to easily integrate your existing applications with your browsers, it won't promote a heterogeneous environment.

STICK WITH WHAT YOU KNOW

If your environment is dominated by Windows and Internet Explorer, and your users rely on the look and feel of Windows technology, ActiveX may be the more cost-effective solution. Your developers will already be familiar with the technology, and since you're already running Internet Explorer, you won't need to change your

browser standard across the enterprise.

While Web-to-host technology can allow you to expand host access to a wider audience in a cost-effective, manageable way, it's still a new technology frontier, to be approached

Unlike Java, ActiveX is not a development language, but a set of technologies that allow applications to work together.

While ActiveX makes it possible to easily integrate your existing applications with your browsers, it won't promote a heterogeneous environment.

with healthy respect. Making the transition methodically, using your existing intranet, will increase your competitive advantage and prepare you for further expansion down the road.

You and your staff, in cooperation with a few strategic vendor partners, can plan and initiate the best transition path. When choosing a vendor, make sure you get the answers to questions like these:

- Is the vendor experienced in host access and TCP/IP?
- Does the vendor have a history of helping corporate users migrate from legacy environments to new technologies?
- Does the vendor offer all the pieces of the connectivity puzzle that you need, or may need, in the future?
- What kind of support does the vendor provide?

Excerpted from a white paper published by WRQ (Seattle, Wash.)

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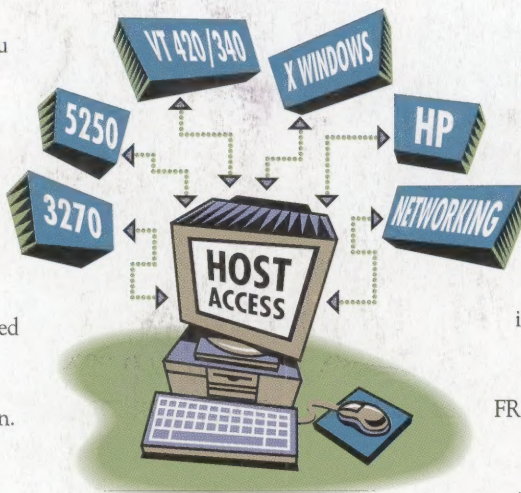
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